



August Bebel

WORKERS OF ALL COUNTRIES, UNITE!

August Bebel

**SOCIETY
OF THE FUTURE**



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PREFACE

August Bebel (1840-1913) was one of the most influential and best loved leaders of the German Social-Democratic Party. Engels said of him that he was one of the most discerning minds in the German Party, that he was a person who could be relied upon at all times and under any circumstances, whom nothing could lead astray.

The son of an impecunious Prussian non-commissioned officer, himself a worker, Bebel came to scientific socialism after long seekings. In his youth he was active in working men's educational societies, in which liberal-bourgeois ideas prevailed. Under the influence of Wilhelm Liebknecht, who was closely connected with the founders of scientific socialism, Bebel became a Marxist. Under his leadership the South-German workers' unions broke with the liberals and united to form the Social-Democratic Party.

In 1867, the German workers elected Bebel to the Reichstag. Lenin noted that Bebel, one of the first workers' deputies, was entitled to considerable merit for his direct participation in devising the Social-Democratic Party's parliamentary tactics. During the Franco-Prussian War Bebel together with Wilhelm Liebknecht, also a Reichstag deputy, adopted a correct internationalist line by refusing to vote for war credits to the German army. This revolutionary action, as also their open support of the heroic Paris Commune (for which Bebel and Liebknecht were sent to prison) won them widespread popularity with the working class. Although Bebel adhered to the teaching of Marx and Engels and resolutely opposed bourgeois ideology, he overestimated the value of legal methods in the working-class struggle for emancipation. He did not adopt a principled Marxist stand at the Gotha Unity

Congress and this promoted the acceptance of the Lassallean programme. While fighting anarchist trends in the German Social-Democratic Party (the faction of the "Young") tooth and nail, Bebel, like Liebknecht, underestimated the danger from the right. He opposed opportunism, but did not understand that it was necessary to purge the Party of opportunists and, for example, considered the resolute struggle of the Bolsheviks against Menshevik opportunists in Russia unjustified. However, while taking due account of Bebel's mistakes, we must not belittle his enormous services not only to the German but also to the international proletariat.

Assessing August Bebel's place in history, Lenin wrote: "The period of preparation and the mustering of working-class forces is in all countries a necessary stage in the development of the world emancipation struggle of the proletariat, and nobody can compare with August Bebel as a brilliant personification of the peculiarities and tasks of that period. Himself a worker, he proved able to break his own road to sound socialist convictions and became a model workers' leader, a representative and participant in the mass struggle of the wage-slaves of capital for a better social system."¹

Alongside his practical activity, Bebel also paid considerable attention to questions of theory. His greatest theoretical work, *Woman and Socialism*, played a major role in popularising Marxism in Germany and beyond her borders. It was first published in 1879 and since then has run into over 50 editions. Drawing on the works of the founders of Marxism and on an enormous body of facts Bebel demonstrates in this work, distinguished by vivid literary style, that the social emancipation of women, the guarantee of their equal rights with men, the creation of conditions for their all-round development is part and parcel of the socialist transformation of social relations. The question of the emancipation of women cannot be solved by itself, it is part of the much broader problem of the working people's social emancipation, of the overthrow of capitalism and the building of a

¹ V. I. Lenin, *Collected Works*, Vol. 19, pp. 300-01.

classless society. Thus, the actual presentation of the problem predetermines the manner in which it is expounded: Bebel gives an outline of the history of mankind from the primitive-communal system to the establishment of the Communist social system, describing in this connection the changes in the position of women as a consequence of changes in the economic structure of society. Thus, during the matriarchy women assumed the principal role in social production and in the life of the primitive-communal society as a whole. With the rise of private ownership in the means of production and the patriarchal family, however, women were increasingly assigned the status of inferior creatures. The social enslavement of women becomes still more marked under capitalism, but as that society advances, material conditions are created making it possible to abolish this enslavement once the transition to the new social system is effected. The author castigates the hypocrisy of bourgeois morality which wants to confine women to the three "K"s. (*Küche, Kirche, Kinder*—kitchen, church, children), bourgeois marriage with its inevitable corollary—prostitution, the Christian dogma demanding the slavish submission of woman to man.

This book, which bears the title *Society of the Future*, is an abridged translation of the last part of Bebel's work. It expounds all the basic aspects of scientific socialism and gives a vivid description of the wonderful future which is already taking shape in countries where a socialist system has been established.

The reader should, however, keep in mind that Bebel and the majority of Social-Democrats in the latter half of the 19th century did not differentiate between the two stages of communist society—the lower and the higher. Speaking of socialism, Bebel refers mainly to the higher stage—to communism. That is why he maintains that in the new society class distinctions and the state will have disappeared, money and trade been abolished, the productive forces will have reached such a high level that the working day will last only three to four hours, and all peoples will live together in one fraternal family, while weapons will be exhibits in museums.

Marx distinguished the two phases of communism and defined them in his *Critique of the Gotha Programme* in 1875. In his definition of the socialist system Marx pointed out: "What we have to deal with here is a communist society, not as it has *developed* on its own foundations, but, on the contrary, just as it *emerges* from capitalist society; which is thus in every respect, economically, morally and intellectually, still stamped with the birthmarks of the old society from whose womb it emerges. Accordingly, the individual producer receives back from society—after the deductions have been made—exactly what he gives to it."¹ Under socialism it is not yet possible fully to satisfy the historically conditioned needs of the individual since the development of productive forces and labour productivity have not yet reached a level high enough to make possible the introduction of communist distribution. Only in the higher phase of communist society, says Marx, "after the enslaving subordination of the individual to the division of labour, and therewith also the antithesis between mental and physical labour, have vanished; after labour has become not only a means of life but life's prime want; after the productive forces have also increased with the all-round development of the individual, and all the springs of co-operative wealth flow more abundantly—only then can the narrow horizon of bourgeois right be crossed in its entirety and society inscribe on its banners: From each according to his ability, to each according to his needs!"²

In his description of the "future society" Bebel did not take these fundamental principles into account, because he, like certain other leaders of the German Social-Democrats, failed to appreciate the importance of Marx's work quoted above, which subjected the programme of the German Social-Democratic Party adopted in Gotha in 1875 to devastating criticism.

It should also be borne in mind that in his description of the future society Bebel proceeded from the then correct view

¹ Marx and Engels, *Selected Works*, Vol. 3, Moscow, 1970, p. 17.

² *Ibid.*, p. 19.

that a more or less simultaneous triumph of the socialist revolution in all or most capitalist countries was possible. Thus Bebel believed that the withering away of the state would begin immediately after the transition to socialism, a proposition first advanced by Marx and Engels. In the new historical conditions of the imperialist epoch, Lenin, who carried on Marx's and Engels's great work, demonstrated that owing to the uneven economic and political development of the capitalist countries, which was becoming especially pronounced in the imperialist epoch, socialism could not triumph simultaneously in all countries. The socialist revolution triumphs initially in one or several countries, and for this reason socialist society has to coexist during a specific historical period with the hostile capitalist world, and, hence, to preserve and reinforce the state and the army which is its appendage. Subsequent developments fully confirmed Lenin's brilliant prognostication which Bebel did not live to see. Bebel asserted that the state's "*very existence becomes unnecessary and impossible* as soon as class antagonisms disappear as a result of the abolition of private ownership" (see p. 19 of this book). Nevertheless, Bebel's description of the withering away of the state, in which he proceeds from the theory of the founders of Marxism, retains its fundamental significance, since he speaks of the historical destiny of the state in the epoch when socialism will have triumphed throughout the world.

In his exposition of Marx's principle on the inevitable *revolutionary* transition from capitalism to socialism, Bebel resolutely opposes the opportunistic view that a socialist revolution is not inevitable and emphasises that "no ruling class can be convinced *by force of reason* unless force of circumstances compels it to accept reality and submit" (p. 17). This sound revolutionary point of view, based on the practical experience of socio-historical development and on a scientific analysis of the laws governing the class struggle, is deeply hostile to bourgeois and revisionist conceptions of "ethical socialism" designed to camouflage the antagonistic interests of the classes in capitalist society.

Modern bourgeois ideologists and revisionists, following in their footsteps, attempt to pass off capitalist socialisation of property (monopolies, joint-stock companies, state-capitalist enterprises) as its transfer into public ownership. These assertions of the modern apologists of capitalism, which they attempt to pass off as scientific conclusions drawn from the latest studies of modern capitalism, are no more than repetitions of what the Bernsteinians said at the turn of the century. Small wonder, therefore, that we find in Bebel's book a splendid rebuttal of all these pseudo-scientific theories designed to defend the modern bourgeoisie. Bebel rightly says that enterprises nationalised and managed by the bourgeois state "are *not* socialist establishments, as some mistakenly assume. They are establishments which are exploited by the state in just as capitalistic a way as if they were in the hands of private entrepreneurs" (p. 61).

In answer to bourgeois and reformist "theorists", Bebel explains that state-capitalist establishments are not "the realisation of socialist aspirations" but are the material prerequisites of socialism which exist in bourgeois society. These prerequisites graphically demonstrate that a socialist transformation of social relations is required. Analysing the development of large-scale capitalist industry and the remarkable successes achieved in the natural sciences and technology, he describes the emergence and development of the material and technical basis of socialist production, a development that leads inevitably to the full satisfaction of the requirements of society as a whole and of its individual members. Capitalism, Bebel points out, impedes the utilisation of the most important scientific discoveries; only under socialism will the scientific management of social production be introduced in all fields of human activity. He emphasises that the relations of production that take shape as a result of the establishment of public ownership of the means of production and of large-scale socialist economy, open up unlimited vistas for the development of production and for an enormous, as compared with capitalism, increase in the productivity of labour. Speaking of the productive forces of socialist society, Bebel dwells

in particular on the use of electricity in industry and agriculture, on the importance of agrochemistry, the synthesis of organic substances and other outstanding scientific discoveries promoting a marked increase in labour productivity.

Naturally, now that atomic energy, automation, telemechanics and electronics have opened up new impressive prospects for the development of productive forces and the transformation of the material and technical basis of man's existence, the scientific data which Bebel cited appear outdated in the extreme, yet they are nevertheless of major historical interest since they vividly demonstrate that conditions for a transition to socialism already existed at the end of the 19th century. At the present time the conditions for a transition to socialist relations are much more favourable and the need for a socialist transformation of social relations is all the more evident. The modern development of productive forces makes it clear that today the establishment of socialist relations of production is much more urgent than it was in Bebel's time.

Bebel's summary of the scientific discoveries and practical experience of his time disproves Malthus's misanthropic theory which bourgeois ideologists use to justify and perpetuate hunger and want, ascribing them to the population growth on our planet. "Malthus", Bebel writes, "came up with the right word at the right time for the English bourgeoisie and thus, although his essay 'contained not a single original sentence', he became a great and celebrated figure, and his name synonymous of the whole doctrine" (p. 146). Bebel shows that the introduction of the latest scientific achievements in industry and agriculture creates opportunities for an unlimited increase in the production of foodstuffs. Want and hunger do not stem from Malthus's notorious "law of diminishing returns", but from the capitalist mode of production, which of necessity restricts the production of consumer articles, thus giving rise to unemployment and poverty. Modern science and practical experience bear this out entirely and refute the false theories of neo-Malthusians, who use the same invalid arguments Bebel refuted almost a century ago. He correctly

noted that the Malthusian concepts are founded not on delusions stemming from the absence of a scientific solution for the food problem, but that they are an expression of the class interests of the bourgeoisie, which attempts to blame laws of nature for the poverty of the working people. Small wonder therefore that today bourgeois ideologists still keep churning out the same reactionary Malthusian nonsense even though the successes of science and technology make it possible to produce more foodstuffs than the world population needs.

In his description of the highest stage of development of communist society Bebel vividly portrays the flourishing of science, the arts and culture. Man is bound to attain these heights in communist society, when he does not have to worry about his daily bread and has sufficient time for full spiritual and physical development. In this connection Bebel shows how crucially important the abolition of the antithesis between mental and physical labour and between town and country is to the development of the human personality. However, it is difficult to agree with Bebel in that all specialisation of labour will disappear in a classless society: "In future there will be no artists, scientists or craftsmen by profession" (p. 111). This is correct only in the sense that there will be no division of labour that *enslaves* the personality, and that man will be able to express his creative talents in various spheres of socially useful activity. Yet, in the light of modern historical experience, it is equally obvious that even under communism to become an outstanding mathematician or artist, engineer or teacher, a person will have to apply himself specifically and for a long period to this or that particular field of knowledge.

The experience of socialist construction also does not confirm Bebel's statement that with the abolition of the antithesis between town and country, the population will move from the big towns to the country (p. 122). The abolition of the antithesis between town and country implies that ultimately there will be neither town nor country in the modern meaning of the word. At the same time it is to be expected that big

towns, even though their nature will change in developed communist society, will preserve their importance as historically evolved cultural centres.

Although we find some incorrect statements in Bebel's book, it must be emphasised that they should not detract from the reader's interest in this outstanding Marxist work. August Bebel's book is not only a vivid example of a scientific popularisation of socialist ideas, but also an outstanding historical monument to the advance of Marxist science, clearly testifying to its great revolutionary force.

T. Oizerman

THE SOCIAL REVOLUTION

1. THE TRANSFORMATION OF SOCIETY

The tide is rising and washing away the foundation upon which our state and social structure rests. All feel that the foundation is shaking and that only strong props can save it. However, these demand great sacrifices on the part of the ruling classes, and there's the rub. Every proposition the implementation of which seriously threatens to prejudice the interests of the ruling classes and their privileged position is bitterly opposed by them and branded as an endeavour aimed at overthrowing the existing state and social order. Yet the sick world cannot be cured without encroaching upon, and eventually abolishing, the privileges and prerogatives of the ruling classes.

"The struggle for the emancipation of the working classes is not a struggle for privileges, but a struggle for equal rights and equal duties and for the abolition of all privileges," the Programme of the Social-Democratic Party reads. It follows that half-measures and minor concessions achieve nothing.

The ruling classes, however, regard their privileged position as quite natural and a matter of course, the justice and perpetuation of which leave no room for any doubt. Therefore, again as a matter of course, they reject and fight every attempt to undermine their privileged position. Even proposals and laws which affect neither the basis of the existing social order nor the privileged position of the ruling classes alarm them greatly the moment their purses are or could be touched. Whole mountains of printed speeches pile up in parliaments until the heaving mountain finally brings forth a little mouse. The most natural demands for protection of labour meet with stubborn resistance as if the

existence of society was at stake. When after endless struggle a few concessions are wrested from the ruling classes, they act as if they had sacrificed a large share of their fortunes. They display the same stubborn resistance when the question of the formal recognition of the oppressed classes' equal rights is raised and, for example, of negotiating labour contracts with them on an equal basis.

This resistance in the simplest matters and to the most natural demands confirms the old principle drawn from experience that no ruling class can be convinced *by force of reason* unless force of circumstances compels it to accept reality and submit. This force of circumstances lies in the growing understanding awakened in the oppressed by the development of prevailing conditions. Class antagonisms are growing ever more acute, evident and tangible. As the understanding by the oppressed and exploited classes of the untenableness of existing conditions grows, their indignation mounts and with it their imperative demand for change and for more humane conditions. As this understanding embraces ever broader circles, it *finally conquers the vast majority of society most directly interested in this change*. In the same measure in which the people's understanding of the untenableness of existing conditions and the realisation of the need for their radical change rises, so *the ruling class's capacity for resistance ebbs, since its power rests upon the ignorance and lack of understanding of the oppressed and exploited classes*. This reciprocal effect is evident and, therefore, everything that promotes it must be welcomed. The progress of big capital is counterbalanced by the increasing realisation of the contradiction between the existing social order and the welfare of the vast majority of the people. Even though the resolution and elimination of social antagonisms may involve great sacrifice and effort, the solution will be found as soon as the antagonisms reach their peak which they are rapidly approaching.

The measures to be taken at various phases of development depend on prevailing circumstances. It is impossible to predict what measures may be necessary in specific circum-

stances. No government, no minister, be he ever so powerful, knows in advance what circumstances will compel him to do next year. This applies even more so to measures which will be affected by circumstances that cannot be accurately calculated or predicted. The question of means is a question of battle tactics. Tactics depend upon the enemy and also on the means both sides have at their disposal. A means excellent today may prove disastrous tomorrow, because the circumstances that yesterday justified its use have changed. With a known objective, the means to attain it depend on time and circumstances; what is vital is to *seize the most effective and decisive means that time and circumstances allow*. Therefore, in venturing to predict the shape of things to come, one can proceed only hypothetically, one must proceed from premises, regarding them as fact.

Proceeding from this point of view, we assume that at a given moment all the evils depicted above will have been carried to such extremes and will have become so evident and perceptible to the vast majority of the population, that they will appear unbearable to it, and that it will be seized by an all-embracing, irresistible desire for radical change, and that the quickest remedy will be regarded as the most effective one.

All social evils without exception have their source in the social order, which at present is based on capitalism, on the capitalist mode of production. The capitalist class is the owner of all means of production—land, mines and quarries, raw materials, implements, tools, means of communications—and thereby exploits and oppresses that vast majority of the people, this resulting in the growing insecurity, oppression and degradation of the exploited classes. Accordingly, the shortest and quickest step would be to transform capitalist property into social property (common property) by means of universal expropriation. *Commodity production becomes socialist production conducted for and by society. Large-scale production and the steadily growing productivity of social labour, hitherto a source of misery and oppression for the exploited classes, now become a source of the highest prosperity and the harmonious development of all.*

2. THE EXPROPRIATION OF THE EXPROPRIATORS

The transformation of all means of production into common property furnishes society with a new foundation. Living and working conditions in industry, agriculture, transport, education, marriage, in scientific, artistic and social life change fundamentally for *both* sexes. Human existence acquires new meaning. The state organisation also gradually loses ground and *the state withers away*; it, as it were, eliminates itself.

The state is a product of social advance from primitive society that rested on communism and that dissolved as *private property* developed. With the rise of private property antagonistic interests emerge within society. Contradictions appear between estates and classes—they inevitably lead to class battles between the various groups of interests and threaten the existence of the new social order. In order to be able to hold down the opponents of the new order and to protect the threatened proprietors, there must be an organisation that suppresses such attacks and pronounces property “legal” and “sacred”. *The state becomes this organisation and power protecting and upholding property.* Through laws it secures the owner in his ownership and confronts those who assail the established order as judge and avenger. The interests of a ruling class of property owners and of state power are, therefore, always conservative in their very essence. The organisation of the state changes only when property interests demand a change. Since the state is the *essential* organisation of a social order based on class rule, *its very existence becomes unnecessary and impossible* as soon as class antagonisms disappear as a result of the abolition of private ownership. With the removal of relations based on domination, the state gradually ceases to exist, just as religion ceases to exist when faith in supernatural beings or in transcendental powers endowed with reason fades away. Words must possess meaning; if they lose it, then they no longer convey concepts.

A capitalistically orientated reader may interject here that

all this is all very well, but by what "legal argument" can society justify these radical changes? The legal argument is the same one that is always used when such changes and reforms are discussed—the *commonweal*. Not the state but society is the source of justice, the state power is the agent of society, vested with authority to administer and dispense justice. Until now the ruling section of society was only a small minority but it acted in the name of the whole of society (the people) by passing itself off as "society", just as Louis XIV pronounced himself to be the state. "L'état c'est moi." When our newspapers write: "The season is beginning, society is making for the city" or "The season is over, society is making for the country", they do not mean the people, but the upper ten thousand, who constitute "society", just as they constitute the "state". The majority are "plebs", "vile multitude", the mob, the people. In keeping with this state of affairs, everything the state does in the name of society, for the "commonweal", is useful and advantageous above all for the ruling classes. Laws are made in their interest. "Salus rei publicae suprema lex est" (The public weal is the supreme law) is a well-known principle of Roman law. But who constituted the Roman public? The subjugated peoples, the millions of slaves? No, the relatively small number of Roman citizens, notably the Roman nobility, who allowed themselves to be maintained by the subjugated.

When, in the Middle Ages, the nobility and the princes plundered common property, they did so "by right", in the "interests of the commonweal", and how drastically communal property and that of the helpless peasants was treated can be seen on every page of history from the Middle Ages to modern times. The agrarian history of the past thousand years is a chronicle of unceasing plunder of communal and peasant property perpetrated by the nobility and the Church in all advanced European countries. When the Great French Revolution expropriated the property of the nobility and the Church it did so "in the name of the commonweal", and the majority of the eight million landowners, today the prop of bourgeois France, owe their existence

to this expropriation. In the name of the commonweal Spain seized church property on several occasions and Italy confiscated it altogether to the applause of the most zealous defenders of "sacred property". The English nobility has for centuries been robbing the Irish and English people of its property and between 1804 and 1832 in the "interests of the commonweal" "lawfully" made itself a present of not less than 3,511,710 acres of communal land. And when the great North-American war¹ for the abolition of slavery declared free millions of slaves, who were the lawfully acquired property of their masters, without paying compensation to the latter, this too was done "in the name of the commonweal". Our entire bourgeois development is an uninterrupted process of expropriation and confiscation by which the factory owner expropriates the artisan, the big landowner—the peasant, the big merchant—the small merchant and, finally, one capitalist the other, that is, a process in which the larger expropriates and absorbs the smaller. To hear our bourgeoisie talk, it would appear that all this happens for the sake of the "commonweal", "for the good of society".

On the 18th Brumaire and the 2nd of December² Napoleon's followers "saved society" and "society" congratulated them; if society in future shall save itself by retaking possession of the property it created, it will be carrying out a

¹ The reference is to the Civil War in the United States, the war between the economically and socially progressive Northern States and the slave-owning Southern States. The war lasted from April 1861 to April 1865 and brought victory to the North.

During the war, in September, 1862, the Lincoln Administration issued a proclamation on the emancipation of slaves.—*Ed.*

² On Brumaire 18-19 (November 9-10, 1799), General Bonaparte and his supporters carried out a coup d'état, thereby completing the course of development of the bourgeois counter-revolution in France. Following the coup, Napoleon became First Consul, head of the newly installed military dictatorship.

December 2, 1851—day on which Louis Bonaparte and his supporters carried out a coup d'état in France that marked the beginning of the Second Empire (officially declared on December 2, 1852).—*Ed.*

most memorable historical deed, for *it will be acting not to oppress some in the interests of others, but to afford equal conditions of life for all and to provide a life worthy of human beings for all*. It will be the noblest moral measure society has ever enacted.

What forms this great social process of expropriation will assume, and in what manner it will take place, eludes all prediction. Who can know how conditions will then shape.

In his fourth "social letter" to von Kirchmann, entitled "Capital", Rodbertus writes on page 117: "The abolition of all capitalist landownership is *no chimera*, but quite feasible on a national-economic scale. Moreover, it would certainly afford most *radical aid to society* which, to put it briefly, is suffering from the growth of rents—ground and capital rent. This would, therefore, be the only way to do away with the ownership of land and capital *which would also not even for a moment interrupt trade and the development of the national wealth*". What have our agrarians to say about this view of one of their former political friends?

How things are likely to shape after this measure cannot be predicted with any certainty. No one can know exactly how future generations may mould their social organisations and how they will satisfy their requirements in the most perfect manner. In society, as in Nature, everything is in a state of constant flux, one thing rises, another wanes. That which is old and has died away is replaced by that which is new and more viable. Inventions, discoveries and improvements, numerous and various, the scope and significance of which often no one can foresee, are made, take effect and each in accordance with its degree of significance revolutionises and reshapes the people's way of life, and society as a whole.

Hence, in the discussion to follow we can only deal with the development of general principles whose assertion evolves naturally from the preceding analysis, and whose implementation can be predicted up to a certain extent. Even before society has not been an entity that allowed itself to be led and guided by individuals (even though it often

seemed to do so—"one imagines that one is pushing when one is actually being pushed") but an organism developing according to definite immanent laws, in future all guiding and leading by the whims of individuals will be all the more out of the question. Society will then be a democracy that has lit upon the secret of its essence, has discovered the laws of its development and applies them consciously to promote its further progress.

I

BASIC LAWS OF SOCIALIST SOCIETY

1. ENLISTMENT OF ALL ABLE-BODIED PEOPLE FOR WORK

As soon as society is in possession of all means of production *the duty of all able-bodied people, irrespective of sex, to work becomes the basic law of socialised society.* Society cannot exist without labour. It, therefore, has the right to demand that all who wish to satisfy their needs, shall, in accordance with their physical and mental capacities, take part in the production of the articles required for the satisfaction of general needs. The stupid claim that socialists want to abolish work is an unparalleled absurdity. Non-workers, idlers exist *only* in bourgeois society. Socialism agrees with the Bible when it says "If any would not work neither should he eat." But, work should be useful productive activity. The new society will, therefore, demand that each person pursue some craft or definite industrial, agricultural or other useful activity, by which he contributes a certain effort to the satisfaction of existing needs. *No enjoyment without work, no work without enjoyment.*

All being obliged to work, all are equally interested in seeing that three conditions of work be fulfilled: first, that working hours be moderate and overtax none; secondly, that work be as pleasant and varied as possible; thirdly, that it be as productive as possible, because the working hours and the measure of enjoyment depend on that. These three conditions depend in their turn on the nature and amount of means of production and labour force available, and on the living standard society demands for itself. Socialist society does not come into being so that men shall live in proletarian conditions *but to abolish the proletarian way of life for*

the vast majority of the people. It seeks to afford to each as high a measure of the amenities of life as possible, and this gives rise to the question: how high will be the demands society will advance?

To be able to determine this there must be an administration that embraces all fields of social activity. Our municipalities afford an effective basis for this; if they are too large to allow of easy supervision, they can be divided into districts. As once in primitive society, all adult members of the community, *irrespective of sex*, will participate in elections and appoint the people to whom they entrust the work of administration. At the head of all local administrations stands the central administration, not a government, let it be noted, that dominates by force, but an executive administrative collegium. It is immaterial whether the central administration is appointed directly by the whole nation or by the local administrations. In future these questions will not possess the importance they have today, for it will not be a matter of filling positions affording greater power and influence and a higher income, but of filling positions of trust, for which the fittest, *male or female*, will be chosen, and who will be recalled or re-elected if this is demanded by circumstances or the electors deem it desirable. All positions will be held only for set terms. The holders of these posts will have no special "bureaucratic qualities", there will neither be any permanent tenure of office nor any hierarchic order of promotion. Hence it is also immaterial whether there are intermediate stages between the central and local administrations, such as provincial administrations, etc. If they are deemed necessary, they will be established, if not, they will be let alone. All this is decided by the requirements practice reveals. If social advance has made old organisations redundant, they are abolished without further ado since no one is personally interested in their continued existence, and new ones are set up. *This administration, resting on the broadest democratic foundation, differs basically from the one we have today.* What a battle in the newspapers, what a war of tongues in our parliaments, what

heaps of documents in our offices over the most trivial change in the administration or the government!

The main and most urgent task will be to determine the size and the nature of the available labour force, the number and kind of the means of labour, factories, workshops, means of communications, land, etc., and their present productivity. The next task will be to establish what stocks are on hand and what amount of articles and supplies is needed to cover requirements over a given period. In a manner similar to that used by the state and various public bodies to establish their annual budgets, in future similar assessments of all society's needs will be drawn up taking into account the changes resulting from increased or new requirements. Statistics play the main role in this; they are the most important auxiliary science in the new society for they furnish the measure of all social activity.

Statistics are used extensively for similar purposes even today. The imperial, state and municipal budgets are based on a large body of statistical data, which is collected each year by the individual branches of the administration. Long experience and a certain stability in current requirements facilitate their collection. Every owner of a larger factory, every merchant, is *normally* able to determine accurately his requirements for the coming quarter and how he should regulate production and purchases. Unless the changes which ensue are excessive, he can easily adapt his plans accordingly.

The experience that crises are caused by blind, anarchic production, that is, because production is carried on without a knowledge of the stocks, sales and demand for various articles on the world market has for years now caused large industrialists in the most diverse branches to amalgamate in cartels and trusts, partly so as to fix prices and partly so as to regulate production on the basis of previous experience and orders received. Estimates based on the production capacity of each individual establishment and its probable sales stipulate how much each should produce over the next few months. Excesses are

punished by high penalties and proscriptions. Entrepreneurs enter into these agreements not for the benefit but to the detriment of the public and to their own advantage. Their purpose is to use the power of the coalition to gain the greatest advantages for themselves. This regulation of production is designed to exact from the public prices which could not be obtained if there were competitive struggle between individual entrepreneurs. They enrich themselves at the expense of the consumers who must pay the demanded prices for products they need. Like the consumer, the worker is also victimised by cartels, trusts, etc. The regulation of production by entrepreneurs deprives part of the employees and workers of their jobs, who in order to live are obliged to underbid their fellow workers. Besides, the social power of the cartels is so great that workers' organisations are seldom able to prevail against them. The entrepreneurs thus have a double advantage: they receive higher prices and pay lower wages. This regulation of production through associations of entrepreneurs *is the reverse of the regulation which will take root in socialist society*. Today the interests of the entrepreneurs are the determining factor, in future the public interest will be decisive. For all that, in bourgeois society even the best organised cartel is unable to make allowances for and to control all factors; competition and profiteering run riot on the world market despite the cartels, and thus it suddenly emerges that there is a flaw in their computations, and the artificial structure collapses.

Like large-scale industry, trade too makes use of extensive statistics. Every week the big trading centres and ports publish reviews on stocks of petroleum, coffee, cotton, sugar, grain, etc., which, admittedly, are often inaccurate, because the owners of the goods have often a personal interest in preventing the truth from being publicised. On the whole, however, these statistics are quite accurate and give those who are interested an idea of how the market will shape in the near future. But here too speculation steps in and distorts and upsets all computations and often makes all real business impossible. However, just as general regulation of pro-

duction is impossible in bourgeois society because of the many thousands of private producers with their conflicting interests, regulation of distribution is equally impossible because of the speculative nature of commerce, the great number of merchants and their conflicting interests. What has been achieved up to now indicates what could be done when private interest disappears and the common interest alone holds sway. Evidence for this is to be found, for example, in the state harvest statistics issued yearly by all advanced countries, which make it possible to estimate yields, supplies needed to cover the domestic demand and the probable prices.

In a socialised society, however, conditions are fully regulated and the whole of society is bound in solidarity. Everything proceeds according to plan and order and the measure of the demand for various products is easily determined. With a little experience the task soon becomes child's play. Once the average demand, for example, for bread, meat, shoes, linen, etc., has been statistically ascertained, and we know the exact productivity of the relevant establishments, *the average daily duration of socially necessary labour can be ascertained. This provides furthermore information as to whether more establishments are necessary for the production of specific articles, or whether some can be closed as superfluous, or re-equipped for other purposes.*

Each individual decides on the type of work he wishes to engage in. The great number of diverse fields of activity makes it possible to take account of the most varied wishes. If it appears that there is a surplus of labour in one field and a shortage in another, then the administration has to make arrangements to establish an equilibrium. To organise production and to give the various workers the chance to be used in the right place, this will be the main task of the elected functionaries. As workers grow accustomed to working with each other, so the mechanism begin to function more smoothly. The various branches of production and departments choose organisers, who are to take over management. They are not taskmasters like the inspectors and

stewards of today but comrades who exercise an administrative function specially entrusted to them instead of a productive function. It is conceivable that with the attainment of advanced organisation and a higher educational standard by all those participating in production, these functions will be alternated and taken over in certain order by all concerned *regardless of sex*.

2. HARMONY OF INTERESTS

Labour organised on the basis of complete freedom and democratic equality, where it is each for all and all for each, hence, where full solidarity reigns, will generate a desire to create and a spirit of emulation not to be found anywhere in the economic system of today. This creative impulse affects the productivity of labour as well.

Furthermore, since *all work for each other's benefit*, all are interested in producing articles of the best possible quality with the least effort and in the shortest possible time in order to save labour time and gain time for the production of new articles to satisfy higher needs. *This common interest induces all to bend their thoughts to improving, simplifying and accelerating the labour process. The ambition to invent and to discover is stimulated to the highest degree, and each will seek to outdo the other in suggestions and ideas.*¹

¹ "...But the power also of emulation, in exciting to the most strenuous exertions for the sake of the approbation and admiration of others, is borne witness to by experience in every situation in which human beings publicly compete with one another, even if it be in things frivolous, or from which the public derive no benefit. A contest, who can do most for the common good, is not the kind of competition which Socialists repudiate" (John Stuart Mill, *Principles of Political Economy*). Every union, every association of persons pursuing identical aims and aspirations, likewise furnishes numerous examples of such higher aims, which pursue not material but only moral rewards. The emulators are moved by the ambition to distinguish themselves, by the desire to serve the common cause. This type of ambition is a virtue, its pursuit promotes the general benefit, while also bringing the

Hence, there will occur precisely the opposite of what the adversaries of socialism claim. How many inventors and discoverers meet their ruin in bourgeois society! How many are exploited and cast aside! If talent and intellect were to head bourgeois society instead of property, *the majority of entrepreneurs would have to make room for their workers, foremen, technicians, engineers, chemists, etc.* These are the people who in 99 cases out of 100 make the inventions, discoveries and improvements which are then exploited by the money-bag. How many thousands of discoverers and inventors have been ruined because they could not find anybody willing to provide the means to implement their inventions and discoveries, how many outstanding inventors and discoverers have been crushed by the social misery of the daily rut eludes all computation. It is not the men with a clear head on their shoulders and sharp intellect but those possessing large wealth who rule the world, while this does not imply that a clear head and the ownership of a well-filled purse are never united in one person.

Everyone who is concerned with practical affairs knows how suspicious the worker is today of every improvement, of every invention that is to be introduced. And he is right. As a rule, it is not he who enjoys the advantage it offers, but his employer; he cannot help but fear that the new machines, the improvements being introduced, will throw him out into the street as superfluous. Instead of welcoming an invention which does honour to mankind and offers it advantages, he only has a curse on his lips. And how many production improvements discovered by workers are not introduced. Workers keep silent about them for they fear lest they should derive harm, not benefit, from them. Such are the natural consequences of the antagonism of interests.

In socialist society the antagonism of interests is *removed*. Each develops his abilities in his own interest and thereby

individual satisfaction. Ambition is harmful and objectionable only if it is pursued to the detriment of the community or at the expense of others.

benefits the community. Today the gratification of personal egoism and the commonweal are for the most part *antagonistic*, the one excludes the other; in the new society these antagonisms are removed, *the gratification of personal egoism and the promotion of the commonweal go harmoniously hand in hand and coincide*.¹

The wonderful effects of such a moral condition are clear. Labour productivity will grow enormously. It will grow in particular owing to the abolition of the enormous *dispersion of the labour force* into hundreds of thousands, even millions of dwarf establishments using imperfect tools and means of production. Everybody knows how vast is the number of petty, medium and big establishments into which German industry is broken up. The amalgamation of small and medium establishments into large ones, which will enjoy all the advantages the most modern machinery can provide, will eliminate the present enormous waste of effort, time, all sorts of materials (light, heating, etc.) and space, and will increase labour productivity many times over.

The difference between the productivity of small, medium and big establishments can be illustrated by figures taken from the industrial census in the state of Massachusetts in 1890. The establishments in the ten basic branches of industry were divided into three categories. Those producing less than \$40,000 worth of products were classified as belonging to the lower category, those producing between \$40,000 and \$150,000 worth were placed in the medium category, and those manufacturing over \$150,000 worth in the upper category.

¹ In weighing the advantages and disadvantages of communism Stuart Mill writes in his *Political Economy*: "And no soil could be more favourable to the growth of such a feeling [that common and personal interests coincide], than a Communist association, since all the ambition, and the bodily and mental activity, which are now exerted in the pursuit of separate and self-regarding interests, would require another sphere of employment, and would naturally find it in the pursuit of the general benefit of the community."

The results were as follows:

Categories	Number of establishments	Percentage of total establishments	Output of the individual categories in value terms (dollars)	Percentage of the total value of output
Lower	2,042	55.2	51,660,617	9.4
Middle	968	26.2	106,868,635	19.5
Upper	686	18.6	390,817,300	71.1
	3,696	100	549,346,552	100

The small establishments numbering more than twice those of the middle and upper categories accounted for only 9.4 per cent of the total output, and the large establishments making up only 23 per cent of the total produced almost two and a half times as much as all the other establishments taken together. But the big establishments could also be rationalised considerably, so that if the whole of production were to be organised in accordance with the most advanced technology, a much *larger* quantity of work could be done.

How much time can be saved by placing production on a rational basis has been shown by the interesting calculations made by Th. Hertzka in his book *The Laws of Social Development*, published in 1886. He investigated how much labour and time was needed to satisfy the requirements of the population of Austria, then numbering 22 million, by means of large-scale production. For this purpose Hertzka gathered information on the capacity of big enterprises in various branches and based his calculations on that data. These calculations cover the cultivation of 10.5 million hectares of arable land and three million hectares of pastures, which should suffice to satisfy the requirements in agricultural products and meat of the above-mentioned population. Hertzka included in his calculations the provision of housing on the basis of a small house of 150 square metres and five rooms, strong enough to last 50 years, for each family. It appeared that 615,000 workers would be required to work the present average working day through-

out the year in agriculture, the building industry and the production of flour, sugar, coal, metal, machinery, clothing and chemicals. These 615,000 workmen, however, accounted for *only 12.3 per cent of Austria's able-bodied population, after excluding all women as well as the male population under 16 and over 50 years of age from production*. If all the five million men available at the time of the investigation were to work instead of the above 615,000, then *each one of them would have to work only 36.9 days, about 6 weeks*, to produce the means of subsistence for 22 million people. If we take 300 working days a year instead of 37, then, with the new organisation of labour, and estimating the duration of the present working day as eleven hours, *it would require only $1\frac{3}{8}$ hours to satisfy the most essential requirements*.

Hertzka also computed the demand for luxury articles by those comfortably situated and found that the production of such articles for 22 million people would require a further 315,000 workers. In all, according to Hertzka, who made allowances for the fact that some industries were not sufficiently represented in Austria, about one million workers, equal to 20 per cent of the able-bodied male population, excluding those under 16 and over 50, would be required to satisfy *all the requirements of the population* in 60 days. If, again, we take into account the entire able-bodied male population, the latter would have to work *an average of only two and a half hours a day*.

This computation will not surprise anybody with a clear grasp of the conditions. If we now assume that men over 50, except the sick and disabled, could still work such moderate hours, and that youths under 16 could be active, as well as a large proportion of the women, in so far as these are not engaged in bringing up children, preparing food, etc., even these hours could be considerably shortened, or else requirements could be considerably raised. Nobody would deny that very significant progress, the scale of which is even hard to foresee, is being made in perfecting production processes, which will provide still greater advantages.

On the other hand, the point is to satisfy the mass of wants felt by all, which today can be satisfied only for a minority, and as culture develops ever new wants emerge, which should also be satisfied. *It should be repeated over and over again that the new society does not want to live in a proletarian way, that it demands a life fit for highly civilised people, and this for all its members, from the first to the last.* It should satisfy not only the material wants of all but should also ensure sufficient time to all for their education in all the arts and sciences, as well as for recreation.

3. ORGANISATION OF WORK

The socialist communal system of economy will also differ in other, highly significant respects from the bourgeois individualistic system. The principle "cheap and bad", which is and must be the principle underlying a large part of bourgeois production, because most consumers can afford only inexpensive goods that soon wear out, is also abolished. Only the best will be produced, goods that will wear longer and have to be replaced less frequently. The follies and vagaries of fashion, which only promote waste and often tastelessness as well, will stop. People will undoubtedly dress more practically and more attractively than they do today—let us say in passing that fashions over the last century, especially men's fashions, have been distinguished by utter tastelessness—but new fashions will no longer be introduced every quarter, a stupidity, which, on the one hand, is closely linked with the rivalry between women and, on the other, with ostentatiousness, vanity and the urge to display one's wealth. At present a great number of people depend for their livelihood on these follies of fashions and are compelled in their own interests to stimulate and foster them. Together with the folly of fashion in dress the folly of fashion in interior decoration will disappear. This is where eccentricity thrives at its worst. Styles that gradually evolved over the centuries and among the most different nations—

people no longer content themselves with European styles but turn to Japanese, Indian, Chinese and other styles—are exhausted in the space of a few years and rejected. Our artists and craftsmen are at a loss where to turn with all their samples and models. No sooner have they stocked up in one style, and hope to be able to recover their outlay, then a new “style” appears which again demands great sacrifices of time and money, mental and physical effort. This scramble and chase from one fashion to the other, and from one style to the other, reflects the nervous tension of our age most graphically. No one would want to assert that there is sense in this rushing and scurrying, or see it as a sign of the health of society.

Socialism alone will reintroduce greater stability in society's habits; it will make rest and enjoyment possible and free people from the bustle and excitement holding sway at present. Nervous tension, the scourge of our age, will then disappear.

But labour is also to be as pleasant as possible. This requires tastefully and practically equipped workshops, the utmost precautions against all danger, the removal of unpleasant odours, vapours, smoke, etc., in short, of all harmful and annoying factors. To begin with, the new society carries on production with the instruments and means of production it inherits from the old society. But these are inadequate. Numerous and scattered, in every respect highly inadequate workshops, faulty tools and machinery, at all possible stages of serviceability, suffice neither for the number of employed, nor for the satisfaction of their demand for convenience and comfort. The setting up of a large number of spacious, light, airy and adequately equipped and decorated workshops is, therefore, the most urgent requirement. Art and technology, mental and manual skills, immediately find an extensive field of application. All branches of engineering, tool production, building and the branches of industry linked with the internal fitting out of premises have ample opportunity for activity. Everything human inventiveness can create in the way of convenient

and pleasant buildings, proper ventilation, lighting and heating, machinery and equipment, and cleaning installations is put to use. The saving in motor power, heating, lighting, time, effort and the various things that make work and life agreeable for all, demands that there be the most rational *concentration* of workshops at certain points. Dwellings will be separated from work premises and from the disagreeable features of industrial activity, while suitable installations and provisions of all sorts will reduce these disagreeable features to a minimum, and will ultimately remove them altogether. In its present state technology has sufficient means at its disposal to eliminate *all* danger from the most dangerous trades, such as mining and the chemical industry. They are not applied in bourgeois society because they are expensive and because there is no obligation to do more for the protection of workers than is absolutely necessary. The discomforts experienced, for example, by miners could be removed by a different method of mining, by comprehensive ventilation, the installation of electric lighting, a considerable shortening of hours and frequent change of shifts. It requires no special insight to find safety measures that would, for example, make accidents on building sites practically impossible and make the work on them one of the most pleasant occupations. Thus, ample protection could be provided against the heat of the sun and against rain in the biggest building sites, and also in all other open air jobs.

Furthermore, in a society that would have an ample labour force at its disposal, such as socialist society, it would be easy to introduce more frequent change of shifts and to concentrate certain types of work at specific seasons and times of day.

The problem of removing dust, smoke, soot and odours could be completely solved by chemistry and technology even today; this is not done or done only in part because private entrepreneurs do not want to sacrifice the necessary funds. Hence, the workshops of the future, irrespective of their location, be they above or underground, will differ most favourably from those of today. In the system of pri-

vate enterprise improved installations are first and foremost a question of money, of whether the business can afford them, whether they will pay or not. If they do not pay, let the worker perish. Capital does not participate where no profit can be made. Humaneness is not quoted on the stock exchange.¹

In socialist society the question of profit will have played out its role, this society will know no other consideration but the *welfare of its members*. What is useful to them and protects them must be introduced, and what harms them must be stopped. Nobody is forced to join in a dangerous game. When undertakings involving danger are embarked upon, one can be sure that there will be many volunteers, all the more so since such undertakings could never be aimed at the destruction but only at the promotion of culture.

4. THE GROWTH OF THE PRODUCTIVITY OF LABOUR

The widespread application of motive power and the most up-to-date machines and tools, a far-reaching division of labour and rational grouping of the labour force will raise production to a level that will *make it possible considerably to reduce the working time* necessary for the production of the requisite amount of means of subsistence. Higher pro-

¹ "Capital is said by a *Quarterly Reviewer* to fly turbulence and strife, and to be timid, which is very true; but this is very incompletely stating the question. Capital eschews no profit, or very small profit, just as Nature was formerly said to abhor a vacuum. With adequate profit, capital is very bold. A certain 10 per cent. will ensure its employment anywhere; 20 per cent. certain will produce eagerness; 50 per cent., positive audacity; 100 per cent. will make it ready to trample on all human laws; 300 per cent., and there is not a crime at which it will scruple, nor a risk it will not run, even to the chance of its owner being hanged. If turbulence and strife will bring a profit, it will freely encourage both. Smuggling and the slave-trade have amply proved all that is here stated." T. J. Dunning, *Trades' Unions and Strikes*, London, 1860, pp. 35, 36. (Karl Marx, *Capital*, Vol. I, Moscow, 1965, p. 760.—Ed.)

duction is of advantage to all; *the individual share in output rises with increased labour productivity, and growing productivity makes it possible to reduce the number of working hours defined as socially necessary.*

Among the types of motive power now finding application electricity will probably assume the decisive place. Even bourgeois society is endeavouring everywhere to put it at its service. The more extensively and the better this is done, the more it promotes general progress. The *sooner* will the revolutionising effect of this most powerful of all natural forces burst the bonds of the bourgeois world and open the door to socialism. Only in a socialist society, however, will electricity find the fullest and broadest possible application. As motive power, as well as a light and heat source, it will make an immeasurable contribution to improving society's living conditions. Electricity has an advantage over every other form of power in that there is an abundance of it in Nature. Our rivers, the tides of the sea, the wind and sunlight provide untold horse-powers, once we learn how to use them rationally and to the full.

"A wealth of energy, by far exceeding all requirements, is offered by the parts of the earth's surface on which the heat of the sun pours down so regularly—and precisely where in the main it is not used and even regarded as burdensome—that a regularly operating technical plant could be set up. It might not be an exaggerated precaution for a nation to secure itself a share of such areas now. This would not even require very big areas; *several square miles in North Africa would suffice to cover the needs of a country as large as the German Reich.* Very high temperatures can be obtained through the concentration of solar heat and this would provide everything else: transportable mechanical power, the charging of storage batteries, light and heat, or direct fuel by means of electrolysis."¹ The man who discloses these prospects is no idle dreamer but a very hon-

¹ *Die Energie der Arbeit und die Anwendung des elektrischen Stromes*, by Fr. Kohlrausch, Leipzig, 1900, Duncker & Humblot.

ourable professor of Berlin University and retired President of the Physico-Technical State Institute, a top-ranking scientist. In his opening address at the Seventy-Ninth Meeting of the British Association for the Advancement of Science in Winnipeg (Canada) in August 1909, the famous English physicist Sir J. Thomson said that the day was not far off when the use of sun-rays would revolutionise our life, would make man independent of the energy of coal and water, and when all big cities would be surrounded by powerful installations, regular sun-traps which would accumulate the heat of the sun and store the energy thus obtained in mighty reservoirs. "It is the energy of the sun, stored up in coal, in waterfalls, in food, that practically does all the work of the world. How great is the supply the sun lavishes upon us becomes clear when we consider that the heat received by the earth under a high sun and a clear sky is equivalent, according to the measurements of Langley, to about 7,000 horse-power per acre. Though our engineers have not yet discovered how to utilise this enormous supply of power, they will, I have not the slightest doubt, ultimately succeed in doing so; and when coal is exhausted and our water-power inadequate, it may be that this is the source from which we shall derive the energy necessary for the world's work. When that comes about, our centres of industrial activity may perhaps be transferred to the burning deserts of the Sahara, and the value of land determined by its suitability for the reception of traps to catch sunbeams."¹ This removes the fear that we shall ever run short of fuel. And since the invention of storage batteries enables us to harness large quantities of energy and to store them for utilisation at any place and any time, it will be possible to store up and utilise, in addition to the power provided by the sun and the tides, the power provided by the wind and

¹ As early as 1864 Augustin Murchot attempted to make direct use of the heat of the sun for industrial purposes and designed a heliomotor, which was improved by Pifré. The biggest heliomotor is installed in California and is used to pump up water from a well at a speed of 11,000 litres a minute.

mountain streams, which only can be obtained periodically. In short, there is no human activity for which, if necessary, motive power would not be available.

Only with the help of electricity has it become possible to use water-power on a large scale. According to T. Koehn, the *water-power available* in eight European countries is as follows:

	H.P.	Per 1,000 of the population
Great Britain	963,000	23.1
Germany	1,425,900	24.5
Switzerland	1,500,000	138.0
Italy	5,500,000	150.0
France	5,857,000	169.0
Austria-Hungary	6,460,000	454.5
Sweden	6,750,000	1,290.0
Norway	7,500,000	3,409.0

Baden and Bavaria have the biggest water-power resources of the German federal states. Baden alone is able to harness about 200,000 h.p. in the Upper Rhine, Bavaria has over 300,000 untapped horse-power (in addition to the 100,000 h. p. now utilised). Professor Rehbock in Karlsruhe estimates the theoretical potential energy of all the running water on the earth's surface at 8,000 million h.p. If even a mere $\frac{1}{16}$ of it could be used to advantage we should still be able to obtain 500 million constantly operating horse-power, that is, power which, according to rough computations, will exceed that obtained from coal mined in 1907 (1,000 million tons) more than tenfold. Although these estimates are as yet theory, they do show what results we can expect in future from "white coal". The falls on the Niagara river, which flows through lakes with a total area of 231,880 square kilometres—an area equal to about 43 per cent of the surface area of the whole of Germany with its 540,000 square kilometres—can provide more water-power than England, Ger-

many and Switzerland taken together. According to another estimate, quoted in an official report, there are no less than 20 million horse-power available in the United States of America—an equivalent of 300 million tons of coal a year. Moreover, the factories driven by "white" or "green" coal, by the power of roaring mountain streams and waterfalls will have no chimneys and no furnaces.

Electricity will make it possible to more than double the speeds on our railways. While Mr. Meems of Baltimore in the early nineties of the past century thought it possible to build an electric car able to travel 300 kilometres an hour, and Professor Elihu Thomson of Lynn (Massachusetts) also believed it possible to construct electric motors, which, given suitable reinforcement of the permanent way and corresponding improvements in the signalling system, would reach speeds of up to 260 km/hr, these assumptions have by now almost been confirmed. The trial runs made in 1901 and 1902 on the military Berlin-Zossen line have proved that it is possible even now to attain a velocity of up to 150 kilometres per hour. Then, in the trial runs made in 1903 the Siemens car reached a velocity of 201, and the AEG model that of 208 kilometres. In the trial runs of express steam trains made in subsequent years speeds of 150 kilometres an hour and more were also reached.

The target now is 200 kilometres an hour. And August Scherl has already appeared on the scene with his new project for express trains, according to which existing lines are to be allocated to freight traffic while large towns are to be linked by monorail trains travelling at 200 kilometres an hour.¹

The question of the electrification of railways has been placed on the agenda in England, Austria, Italy and Amer-

¹ According to the new railway construction and traffic regulations of November 4, 1904, the speed limit for passenger trains with a thoroughgoing braking system has been set at 100 km/hr. In 1903, the Prussian Ministry of Public Works decided to replace steam traction on the Leipzig-Bitterfeld-Magdeburg and Leipzig-Halle lines by electric traction.

ica. An electric express capable of speeds up to 200 kilometres an hour is to link Philadelphia and New York.

The speed of steamers will also increase and the decisive factor in this is the steam turbine.¹ "It stands today in the forefront of technical interest. It appears to be destined to oust the piston-type steam-engine in extensive fields of application. While most engineers were still regarding the steam turbine as a proposition of the future, it had become a problem of the present, which by virtue of its success attracted the attention of the entire technical world. . . . It was only electrical engineering with its fast machines that created a vast field of application for the new power-driven machine. The vast majority of all steam turbines operating today serve to drive dynamo machines."² The new steam turbine has shown its supremacy over the older piston-type steam-engine particularly in ocean crossings. Thus, in August 1909 the English ocean liner *Lusitania*, equipped with steam turbines, made the trip from Ireland to New York in four days, 11 hours and 42 minutes, at an average speed of 25.85 knots (about 48 kilometres) an hour. The *America* built in 1863, the fastest ship in its day, travelled at a speed of 12.5 knots (23.16 km).³ The day is not far off when a satisfactory solution will be found to enable big ships to use electric propeller drives. They are already being used in small ships. Simple maintenance and high safety in operation, good self-regulation and smooth running make the steam turbine the ideal propelling power for the generation of electricity on board.

¹ While the old steam-engine rotates the flywheel and driving wheels indirectly with the help of a piston moving to and fro, a steam turbine effects rotation directly, in the same way as the wind rotates a wind-wheel.

² C. Matchoss, *Die Entwicklung der Dampfmaschine*. 2. Band, S. 606 bis 607, Berlin, 1908.

³ "In the fifties a trip to New York by sailing ship still took on an average six weeks, the steamer made the crossing in two weeks. In the nineties the distance was covered in a week, now it takes 5½ days. As a result of this progress, the two continents have drawn closer to each other than were Berlin and Vienna a hundred years ago." E. Reyer, *Kraft*, S. 173, Leipzig, 1908.

Thus the electrification of all shipbuilding will go hand in hand with the electrification of the entire railway network.

Electricity also revolutionises hoisting equipment. "While steam power first made it possible to build hoisting machines using natural power, electric power transmission has completely transformed the construction of hoisting machines, since it alone made these machines mobile and constantly ready for operation." Electric drive has led, among other things, to extremely far-reaching changes in the design of cranes. "With its massive curved beak of rolled iron, resting on a foundation of heavy square slabs, with its slow movements and hissing of steam it puffs out, the steam crane is reminiscent of a prehistoric monster. Once it has taken hold it works up an enormous leverage, but it needs people as understrappers, who attach the load to its hook with chains. Because its gripping movement is unwieldy, slow and clumsy, the steam crane is only suitable for heavy freight but not for the rapid transfer of loads. Even the exterior of the modern steel crane driven by electric power creates a very different impression: we are confronted with a delicate steel lattice-work girder reaching across the work premises, and protruding from it a slender, pincer-like beam that can be moved in all directions; the whole thing is operated by one person, whose gentle pressure on the control lever regulates the electric currents and with their help makes the slender steel members of the crane carry out rapid motions, so that they, without the assistance of an understrapper, grip the glowing block of steel and swing it through the air. No noise is heard except the soft humming of the electric motors."¹ Without the help of these machines it would be impossible to cope with the steadily growing loads. The development of the hoisting capacity between the middle and close of the 19th century can be illustrated by comparing the capacity of the dock cranes at Pola and Kiel. The hoisting capacity of the first was 60 tons, of the second 200 tons. The

¹ O. Kammerer, *Die Technik der Lastenforderung einst und jetzt*, S. 260, Berlin, 1907.

running of a Bessemer steel works is possible only if rapidly operating hoisting machines are available, otherwise the enormous quantities of molten steel, which are produced in a short time, could not be transported in moulds. In the Krupp works in Essen alone there are 608 cranes with a total hoisting capacity of 6,513 tons, equal to the capacity of a goods train of 650 trucks. The low cost of sea-freight, a vital factor in communications in the modern world, would be impossible if the capital invested in ships could not be used so intensively thanks to rapid unloading. The equipment of a ship with electric deck cranes reduces annual operating costs from 23,000 to 13,000 marks, that is, almost halves them. Moreover this comparison applies to the progress made in the space of a mere ten years or so.

Each passing day brings epoch-making successes in all fields of communications technology. The problem of flight, which two decades ago still seemed insoluble, has already been solved. And if dirigible airships and various types of flying apparatus do not yet make mass transport easier and cheaper, but serve only sports and militarism, the day will come when they too will multiply society's productive forces. Important progress is also being made by wireless telegraphy and telephony; each day they are finding wider industrial application. In a few years all communications will be placed on a new footing.

Mining, with the exception of the hewing process, is today being revolutionised to an extent that would have been inconceivable ten years ago. This revolution consists in the introduction of electric drive for drainage, ventilation, underground transport and hoisting. The electric drive has revolutionised working machines, pumps, winches and hoisting equipment.

In a speech delivered at a banquet of the Association of Chemical Manufacturers in the spring of 1894, Professor Berthelot (died March 18, 1907), the former French Minister of Public Instruction, outlined fantastic prospects for chemistry's future. Berthelot described the probable position of chemistry in the year 2000, and although his speech contains

many a droll exaggeration, it also has much that is apt and we shall therefore give some excerpts from it.

Monsieur Berthelot described chemistry's achievements over the past few decades and among them mentioned the following: "The manufacture of sulphuric acid and soda, bleaching and dying, beet-sugar, therapeutic alkaloids, gas, gilding and silvering, etc.; then came electrochemistry, which radically transformed metallurgy, thermal chemistry and the chemistry of explosives, which supplies the mining industry, as also warfare, with new sources of power, and the wonders of organic chemistry in the manufacture of dyes, perfumes, of therapeutic drugs and antiseptics, etc. This is, however, only a *start*, soon much more important problems are to be solved. By the year 2000 there will be no more agriculture and no peasants, for chemistry will have put an end to the present forms of agriculture. There will also be no more coal mines and, hence, no miners' strikes. *Fuels* will be replaced by chemical and physical processes. Duties and wars will have been abolished: *aerial navigation*, which will use chemical substances for motive power, will have pronounced the death sentence upon those obsolete institutions. Industry's problem will be to find sources of energy which are inexhaustible and can be restored with a minimum of effort. Until now we have produced steam with the help of chemical energy released by burning coal; but coal is difficult to mine and its deposits decrease from day to day. Man should turn his thoughts to the utilisation of *solar heat* and *heat from the earth's interior*. There is reason to hope that both sources will be used boundlessly. To bore a well of 3,000 to 4,000 metres is not beyond the powers of present-day engineers, let alone those of the future. The source of all heat and of all industry will thus be unlocked and if *water* is taken into consideration as well, all imaginable machinery on earth could operate, and there would not be any noticeable decrease in this source of energy in hundreds of years.

"Terrestrial heat would help to solve numerous chemical problems, including the supreme problem of chemistry, the *production of food*. In principle, the problem has already

been solved. The synthesis of oils and fats has been known for a long time, sugar and carbo-hydrates are also known, the method of compounding nitrogen elements will soon be learned. The food problem is a purely chemical one; the day the necessary cheap power is obtained it will be possible to use the carbon from carbon dioxide, hydrogen and oxygen from water and nitrogen from the atmosphere to produce foods of all kinds. What *plants* have done up to now will be carried out by *industry* and *more effectively* than by Nature. The time will come when everybody will carry with him a box of chemicals in his pocket from which he will satisfy his daily quota of protein, fat and carbo-hydrates, paying no heed to the time of day or season, to rain and drought, frost, hail and insect pests. A revolution will then set in which is inconceivable today. Orchards, vineyards and pastures will disappear; man will gain in gentleness and morality, because he will no longer live by the murder and destruction of living beings. Then the difference between fertile and barren areas will disappear, *the deserts* may become *man's favourite habitat*, because they are healthier than the infested alluvial land and foul swampy plains where agriculture is now practised. Then *art* and all that is beautiful in human life will come into their own as well. The earth will no longer be, as it were, marred by geometrical shapes now drawn by agriculture, but it will be a *garden* in which grass and flowers, bushes and woods can be allowed to grow as they please, and in which mankind will live in abundance in a golden age. People will, therefore, not sink into indolence and corruption. Work is necessary for happiness, and man will work as much as ever before, because he will be working only *for himself*, in order to raise his mental, moral and aesthetic development to the highest possible level."

The reader may accept what he wishes in Berthelot's speech; however, it is certain that in future progress in diverse fields will enormously increase the quality, volume and variety of products and that for future generations the good things in life will be improved to an almost inconceivable degree.

Professor Elihu Thomson agrees with Werner Siemens, who as early as 1887, at the Berlin Conference of Naturalists, expressed the view that it would be possible with the help of electricity *to transform chemical elements directly into food*. While Werner Siemens was of the opinion that it would be possible, even if in the remote future, to produce artificially a carbo-hydrate such as grape-sugar, and later also starch, so closely related to the former, which would enable people to make "bread out of stones", the chemist Dr. V. Meyer claimed that it would be possible to use wood fibre as a source of human food. In the meantime (1890) Emil Fischer has actually produced grape-sugar and fruit-sugar artificially and thus made a discovery which Werner Siemens thought possible only "in the remote future". Since then chemistry has made further progress. Indigo, vanillin and camphor have all been artificially produced. In 1906, W. Löb succeeded in assimilating carbon dioxide as far as the sugar stage outside plants by means of high voltages. In 1907, Emil Fischer obtained one of the most intricate synthetic substances, one very closely related to natural protein (an albumen). In 1908, R. Willstätter and Benz produced pure chlorophyll and proved that it is a magnesium compound. In addition, a series of important substances that play a role in reproduction and heredity have also been produced artificially. The solution of the main problem of organic chemistry—the production of protein—can thus be expected in the not too distant future.

5. ABOLITION OF THE ANTITHESIS BETWEEN MENTAL AND PHYSICAL LABOUR

A need deeply implanted in human nature is to be free to choose an occupation and to change it at will. Just as constant repetition makes the choicest dish repulsive, so does the treadmill of a repetitive occupation day in day out render the mind dull and slack. Man works only mechanically, does what he has to do without any higher inspiration and enjoyment. *In every man* there are latent abilities and inclinations

which only need to be awakened and developed to produce the most beautiful results. Only then will man become full man. Socialist society will offer full opportunities for the satisfaction of this need for variety. The enormous growth of the productive forces in conjunction with the increasing simplification of the labour process makes it possible not only considerably to reduce working hours but *also facilitates the acquisition of the most diverse skills.*

The old apprentice system has outlived its usefulness even now, it exists and is possible only in the most *backward, out-dated* modes of production, such as handicrafts. Since these disappear in the new society, all the establishments and patterns inherent in them disappear at the same time. New ones take their place. Even now every factory shows how few of its workers are plying the trade they were apprenticed in. The workers ply the most diverse trades and mostly only a short time is needed to train them for a single operation, in which they then, in accordance with the prevailing system of exploitation, exert themselves for long hours, without change or regard for their inclinations and while working at their machines become machines themselves.¹ This state of affairs will also be eliminated by the new organisation of society. There will be ample time for the acquisition of manual dexterity and artistic skills. Large training workshops, equipped with every comfort and first-class technical appliance, help young and old to acquire skills. Chemical and physical laboratories, satisfying all the demands of these sciences at the level reached by then, will be provided and likewise adequate numbers of teaching staff. Only then will people realise what a world of ambitions and abilities the capitalist mode of production was stifling, or by what false methods it let them develop.²

¹ "The generality of labourers in England and in most other countries have as little choice of occupation or freedom of locomotion, are practically as dependant on fixed rules and on the will of others as they could be on any system short of actual slavery" (John Stuart Mill, *Principles of Political Economy*).

² "A French workman, on his return from San Francisco, writes as follows: 'I never could have believed that I was capable of working at

It is not only possible to take into consideration this need for variety, it must be the *aim of society* to satisfy this need, because it is one of the factors upon which *hinges man's harmonious development*. Faces that betray men's professions which are to be found in present-day society—whether these be professions involving some kind of set uniform actions or indolence—will gradually disappear. At present there are extraordinarily few people who have the opportunity to vary their occupation. Occasionally we find some favoured by circumstances who are able to escape the monotony of an everyday occupation, who after having paid tribute to physical work are able to recuperate by engaging in mental work. Conversely, now and then, we find people engaged in mental work who take up some kind of handiwork, gardening, etc. That a pursuit involving an alternation of mental and manual labour has a beneficial effect will be confirmed by every hygienist, *it alone is natural*, provided that every activity is *carried on with moderation* and that it corresponds to the strength of the individual.

In his article "The Significance of Science and Art" Count Leo Tolstoi lashes out at the hypertrophic and unnatural character that art and science have assumed in the unnatural conditions prevailing in our society. He sharply condemns the contempt for physical labour that has taken root in present-day society and recommends a return to natural conditions. Everybody who wishes to live naturally and find enjoyment should spend the day by engaging, first, in physical labour in agriculture, secondly, in handicrafts, thirdly, in mental work, fourthly, in enlightened social intercourse. No-

the various occupations I was employed on in California. I was firmly convinced that I was fit for nothing but letter-press printing. . . . Once in the midst of this world of adventurers, who change their occupation as often as they do their shirt, egad, I did as the others. As mining did not turn out remunerative enough, I left it for the town, where in succession I became typographer, slater, plumber, etc. In consequence of thus finding out that I am fit for any sort of work, I feel less of a mollusk and more of a man.' " A. Corbon, *De l'enseignement professionnel*, 2ème ed., p. 50 (Karl Marx, *Capital*, Vol. I, Moscow, 1965, p. 487.—Ed.)

body should do more than eight hours physical work in a day. Tolstoi, who himself practises this way of life and who, as he himself says, only feels human since he has taken it up, overlooks only the fact that what is possible for him—a man of independent means—is under present conditions impossible for the majority of people. A man, who has to put in ten to twelve, and sometimes even more, hours of hard physical labour every day to secure the most meagre existence and who is brought up in ignorance, is unable to follow the Tolstoian way of life. Neither can those, who have to carry on a struggle for existence and submit to its demands, while the few who, like Tolstoi, could afford it do not for the most part experience the need to do so. It is one of the illusions Tolstoi indulges in: the belief that preaching and example can change social systems. The experience gained by Tolstoi with his way of life proves how rational it is, but to introduce it as the general practice there must be different social conditions, a new society.

*The future society will provide these conditions, it will have an abundance of scholars and artists of every kind, but each of them will do physical work for part of the day and, in keeping with his tastes, devote the rest of the time to his studies and the artistic pursuits, to sociable intercourse.*¹

The existing antithesis between mental and physical labour, an antithesis the ruling classes intensify to the utmost in order to secure for themselves in addition the intellectual means of domination, will therefore *have to be abolished*.

¹ What may become of people in conditions favourable to their development can be seen from the example of *Leonardo da Vinci*, who was an excellent painter, famed sculptor, sought-after architect and engineer, an excellent builder of fortifications, musician and extemporiser. *Benvenuto Cellini* was a famous goldsmith, excellent modeller, good sculptor, celebrated builder of fortifications, first-rate soldier and competent musician. *Abraham Lincoln* was a woodcutter, farmer, boatman, shop assistant and lawyer, before he became President of the United States. It can be said without exaggeration that most people follow a trade that does *not* correspond to their abilities, because it is not free will but force of circumstances that dictates their choice. Many a bad professor would do good work as a shoemaker and by the same token many a good shoemaker would make a good professor.

6. GROWTH OF THE CAPACITY TO CONSUME

From the above it also follows that times of crisis and unemployment will be impossible in the future society. Crises arise from the fact that capitalist production, lured on by profit and without a reliable gauge for actual demand, creates a glut on the commodity market, results in overproduction. The commodity nature of products in the capitalist economic system, which their owners endeavour to exchange, makes the consumption of commodities subjects to the consumers' *capacity to buy*. This capacity is, however, very limited since the vast majority of the population is underpaid for their labour and cannot put it to use at all if their employer is unable to squeeze surplus value out of it. *The capacity to buy and the capacity to consume are two different things in the bourgeois world.* Many millions are in want of new clothes, shoes, furniture, linen, food, beverages, but they have no money, and their wants, that is, their *capacity to consume*, remain unsatisfied. The commodity market is overstocked, but the masses starve; they want to work but can find no one to buy their labour, because the entrepreneur does not gain anything from doing so. "Perish, rot, become a tramp, a criminal, I, the capitalist, cannot change things, I cannot use commodities for which I cannot find a purchaser to buy them with a corresponding profit." And in his own way the man is quite right.

In the future society this contradiction will no longer exist. It does not produce "commodities" to be "bought" and "sold", *but produces the necessities of life that are used up, consumed, and have no other purpose.* In the new society the capacity to consume is not limited by the individual's ability to buy, as it is in bourgeois society, *but by the collective capacity to produce.* If the instruments of labour and the labour force are available *every need* can be satisfied. The social capacity to consume is limited only by *the consumers' saturation point.*

There being no "commodities" in the future society, nei-

ther can there be any money. Money appears as the antithesis of the commodity, but it is a commodity itself. Yet money, even though itself a commodity, is at the same time the social equivalent, the measure of value for all other commodities. The future society will not produce commodities but only articles for the satisfaction of needs, use values, whose production requires a definite amount of social labour time. The average labour time required for the production of an article is the only measure by which its social usefulness can be measured. Ten minutes of social labour time spent on an article are equal to ten minutes of social labour time spent on another article, no more no less. Society does not want to "profit", it only wants to organise among its members the exchange of articles of equal quality, equal use value, and ultimately it does not even need to establish a use value—it simply produces what it needs. If society should find that for the production of all necessary products it needs a three-hour working day, it will introduce one.¹ Should methods of production so improve that requirements can be covered in two hours, a two-hour working day will be introduced. Should society conversely require the satisfaction of higher wants which, despite the increase in the labour force and higher labour productivity, cannot be satisfied in two or three hours, a longer working day is introduced. Its will is its kingdom of heaven.

The amount of social labour time required for the production of every single article is easily calculated.² The ratio of

¹ It should always be borne in mind that all of production is organised to the highest level of technical perfection and that *all people* are engaged in work so that under certain circumstances a three-hour working day may still be too long. Owen, who was a big manufacturer and can therefore be considered an expert, was of the opinion that in the first quarter of the 19th century a two-hour working day would suffice.

² "The quantity of social labour contained in a product need not then be established in a roundabout way; daily experience shows in a direct way how much of it is required on the average. Society can simply calculate how many hours of labour are contained in a steam-engine, a bushel of wheat of the last harvest, or a hundred square yards of cloth of a certain quality. It could therefore never occur to it still to express

the part to the whole of the working time is measured accordingly. Some sort of a certificate, a piece of printed paper, gold or tin testifies to the number of hours worked and enables the owner to exchange this token for all manner of articles. Should he find that his wants come to smaller total than he has received for his efforts, he correspondingly works a shorter time. Should he want to give away what he has not consumed himself, there is nobody to stop him from doing so; should he *wish* to work for somebody else to enable that person to indulge in *dolce far niente*, or should he wish to share his title to the social products with him, there is nobody to prevent him from doing so. But no one can compel him to work for another's advantage, no one can withhold from him any part of his title to the social products he has earned. Everyone can satisfy all his fulfillable wishes and claims, but not at the expense of others. He receives the equivalent of what he has given to society, neither more nor less, and he is free from any exploitation by third parties.

7. EQUAL DUTY TO WORK FOR ALL

"But what about the difference between the lazy and the industrious, between the intelligent and the stupid?"—such is one of the main questions of our opponents, and the answer to it causes them the greatest headache. That, for example, no distinction is made in our civil service hierar-

the quantities of labour put into the products, quantities which it will then know directly and in their absolute amounts, in a third product, in a measure which, besides, is only relative, fluctuating, inadequate, though formerly unavoidable for lack of a better, rather than express them in their natural, adequate and absolute measures, *time*. . . . It will have to arrange its plan of production in accordance with its means of production, which include, in particular, its labour-power. The useful effects of the various articles of consumption, compared with one another and with the quantities of labour required for their production, will in the end determine the plan. People will be able to manage everything very simply, without the intervention of much-vaunted 'value'." (Frederick Engels, *Anti-Dühring*, Moscow, 1969, p. 367.—*Ed.*)

chy between the "lazy" and the "industrious", the "intelligent" and the "stupid", but that it is the *length of service* that decides the size of salaries and in most cases also promotion as well, except when special training is needed for some higher post, this is something to which none of these artful schemers and "wiseacres" ever give any thought. Teachers, professors—the latter in particular asking most naive questions—take up posts because of the salaries attached, not because of their qualities. It is common knowledge that in many cases promotion in our military, civil service and academic hierarchies goes not to those best qualified but to those blessed with advantages of birth, relatives, friends, the favour of women. That wealth is not measured by diligence and intelligence is strikingly illustrated by the Berlin innkeepers, bakers and butchers, who are sometimes unable to distinguish the dative from the accusative, but vote in the first class of the Prussian three-class electoral system, whereas the Berlin intelligentsia, men of science and senior civil servants of the Reich vote in the second or third class. No distinction will be drawn between the lazy and the industrious, the intelligent and the stupid, because the concepts these terms convey will have disappeared. Society considers as "lazy" him who has been thrown out of work and forced to become a tramp, and who in the end actually does become one, or him who after being deprived of a decent upbringing goes to the dogs. But he who calls one who is rolling in money and frittering away the day with idleness and debauchery a "lazy" fellow heaps insults on an "honourable" man.

How do things stand in the future society? All develop under equal conditions, and each is active according to his inclinations and skill and, therefore, the differences in performance will be insignificant.¹ The atmosphere of society

¹ "All generally well-organised people are born with an almost equal intellect, but education, laws and circumstances make them differ from each other. The correctly understood individual interest merges with the common or social interest." Helvetius, *On Man and His Education*. Helvetius was right about the vast majority of people; but there is a difference in the natural aptitudes individuals have for diverse occupations.

which stimulates each to excel the other also helps to even out these distinctions. If someone discovers that he cannot do as much as others in some field, he chooses a different one, more in keeping with his strength and abilities. Those who have worked together with a large number of people in an establishment know that men who proved unfit and useless for a certain activity after being transferred to different posts carried out their jobs extremely well. There are no normal people who cannot satisfy even the highest demands in one activity or another, if only they are placed in the right job. By what right does one claim precedence over another? If somebody has been treated by Nature so step-motherly that with the best will in the world he is unable to do what others can, *society cannot punish him for the faults of Nature*. If, conversely, someone has received from Nature abilities which raise him above others, *society is not obliged to reward what is not his personal merit*. In socialist society, it should be remembered, all will enjoy identical living conditions and opportunities for education, and each will be afforded the opportunity to develop his knowledge and abilities in accordance with his talents and inclinations, which guarantees that not only the level of knowledge and abilities will be much higher in socialist than in bourgeois society, but also that they will be *more evenly distributed* and yet *more varied*.

When Goethe while on a journey along the Rhine was studying the Cathedral of Cologne, he discovered in the building acts that the architects of old had paid their workmen equal wages for equal working hours; they did this because they wanted to get good and conscientious work from them. To bourgeois society this seems in many respects an anomaly; it introduced a piece-work system by which the workers compel each other to overwork, and this makes it all the easier for the entrepreneur to underpay his workers, and to lower wages. The same also applies to mental work. Man is a product of the time and circumstances in which he lives. A Goethe born under conditions equally favourable to his development in the fourth, instead of the 18th century,

would probably have become, instead of a famous poet and natural scientist, a *great Father of the Church*, who might have put St. Augustine in the shade. If, on the other hand, Goethe had come into the world as the son of a poor cobbler in Frankfort, instead of being the son of a rich Frankfort patrician, he would hardly have become a Minister of the Grand Duke of Weimar, but would most probably have remained a cobbler and would have died an honourable master of the craft. In his *Wilhelm Meister* Goethe himself acknowledged the advantage of his having been born in a materially and socially favourable station which enabled him to develop his capacities to such a high level. If Napoleon I had been born a decade later, he could have never become Emperor of France. Gambetta, too, would never have become what he did without the war of 1870-71. If a naturally gifted child of intelligent parents is placed among savages he, too, will become a savage. *In short, man is what society has made of him.* Ideas are not a product that springs from the mind of the individual as a result of inspiration from above, but they are produced in the mind of the individual by the social life and activity around him, by the *Zeitgeist*. An Aristotle could not have come up with the ideas of a Darwin and a Darwin inevitably reasoned differently from an Aristotle. Each thinks as the spirit of the age, as his environment and its phenomena force him to think. Hence the observation that different people often arrive at identical ideas *simultaneously*, and that identical inventions and discoveries are made simultaneously in places far apart from each other. Hence also the fact that an idea proclaimed fifty years too early left the world cold, but when repeated fifty years later, sets the whole world astir. In 1415, Emperor Sigismund could dare to break his word to Jan Hus and have him burned in Constance; in 1521, Charles V, though much more of a religious fanatic, was obliged to allow Luther to depart from the Diet of Worms¹ unharmed. Ideas are a pro-

¹ In 1414, Jan Hus, leader of the Czech Reformation, was invited by Emperor Sigismund to attend the Church Council in Constance. There he was accused of heresy and treacherously seized and condemned to

duct of social interaction, of social life. What is true of society in general, is true in particular of the various classes that in a given historical epoch compose society. Because every class has its specific interests, it also has its specific ideas and views, which lead to the class struggles, which abound in the annals of history and which have reached their climax in contemporary class antagonisms and class struggles. Therefore, not only the *age* a man lives in, but also the *social stratum*, to which he belongs in that age, is important since it moulds his sentiments, thoughts and actions.

Without modern society, there are no modern ideas. This we regard as clear and obvious. It should be added that in the future society, the means each uses for his development are *the property of society*. Hence, society cannot consider itself obliged to honour especially *that which* it itself has made possible and which *is its own product*.

So much for the qualification of physical and mental work. It follows that there can also be no distinction between "higher" and "lower" work, such as is often found today, for example, when a mechanic thinks more highly of himself than of a day-labourer who carries out road maintenance and similar work. Society allows only socially useful work to be carried out; hence, all work is of equal value to society. If work that is unpleasant and repulsive cannot be carried out by mechanical or chemical means and cannot through some process or other be changed into pleasant work—in view of the progress made in the technical and chemical fields this prospect will *undoubtedly* materialise—and if it should be impossible to find the necessary workers to carry it out voluntarily, the obligation will lie upon each member of society to do his share of such work when his turn comes.

the stake despite his Safe-Conduct signed by the Emperor. His execution on June 6, 1415, marked the beginning of the Hussite Wars.

In 1521, an imperial edict was issued by the Diet of Worms against Martin Luther, leader of the German Reformation, accusing him of heresy, which meant that he was liable to imprisonment and his own property and that of his supporters was subject to confiscation. Luther, supported by feudals, refused to recant. He evaded arrest, and went into hiding in the castle of Frederick of Saxony.—*Ed.*

There will then be no false shame and no senseless contempt for useful work. These exist only in our society of drones, where idleness is regarded as an enviable lot, and where the worker is the more despised, the more arduous and unpleasant his work and the more essential for society. Today the more unpleasant work is, the worse it is paid. The reason for this is that we have a great number of workers who are kept down at the lowest cultural level and who, as a result of the constant revolutionising of the production process, are thrown out into the street to form a reserve army, and that these workers in order to live are willing to do the most wretched work at wages so low that it is even "unprofitable" to introduce machinery for it. For example, stone-breaking is proverbially one of the worst paid and most disagreeable kinds of work. It would be a trifling matter to have stone-breaking done by machinery, as is the case in the United States, but we have such a lot of cheap labour that such machines would not "pay".¹ Street and sewer cleaning, refuse

¹ "If, therefore, the choice were to be made between Communism with all its chances, and the present state of society with all its sufferings and injustices; if the institution of private property necessarily carried with it as a consequence, that the produce of labour should be apportioned as we now see it, almost in an inverse ratio to the labour—the largest portions to those who have never worked at all, the next largest to those whose work is almost nominal, and so in a descending scale, the remuneration dwindling as the work grows harder and more disagreeable, until the most fatiguing and exhausting bodily labour cannot count with certainty on being able to earn even the necessities of life; if this, or Communism, were the alternative, all the difficulties, great or small, of Communism would be but as dust in the balance" (John Stuart Mill, op. cit., p. 128). Mill has tried hard to "reform" the bourgeois world, to make it see "reason". Naturally, in vain. And, therefore, he, as every intelligent person who realises the true state of affairs, ultimately became a socialist. He did not dare to admit this in his lifetime but made arrangements for his autobiography, containing his socialist credo, to be published after his death. His position was similar to that of Darwin, who in his lifetime did not want to be known as an atheist. Such is the comedy bourgeois society forces thousands to play. The bourgeoisie affects loyalty, faith in religion and authority, because its rule rests on the masses' recognition of these "virtues", but it laughs at them in its sleeve.

clearance, underground work and similar jobs could already at our present level of development be done with the aid of machinery and technical equipment so that they would lose every trace of the disagreeableness often associated with them for workers. Actually, a worker who pumps out sewers in order to protect people against harmful miasmas is a very useful member of society, whereas a professor who expounds falsified history in the interests of the ruling class, or a theologian who seeks to cloud men's minds with supernatural transcendental teachings, are very harmful individuals.

The learned fraternity of today, blest with high office and honours, represents for the most part a guild designed and paid to defend and justify the domination of the ruling classes with the authority of science, to make it appear just and necessary, and to preserve existing prejudices. Actually, this guild to a large extent engages in sham science, mind-poisoning, work detrimental to civilisation and mental wage-labour in the interests of the bourgeoisie and its clients.¹ A state of society that will make the existence of such elements impossible will be promoting the liberation of mankind.

On the other hand, genuine science is often connected with very unpleasant and repulsive work, such, for instance, as when a doctor makes an autopsy on a decaying corpse or operates on suppurating parts of the body, or when a chemist investigates excrement. These jobs are often more repulsive than the most repulsive jobs day-labourers and unskilled workers perform, but nobody ever thinks of admitting this. The difference is that one type of work requires extensive studies to be performed, while the other can be done by anyone and does not involve long studies. Hence, the entirely different appraisal. However, in a society where, owing to the wide opportunities for education afforded to all, the distinctions between the "learned" and "uncultured" have dis-

¹ "Scholarship is as often the hand-maid of ignorance as of progress". Buckle, *History of Civilisation in England*.

appeared, the antithesis between skilled and unskilled work will also disappear, particularly since, due to technological progress, there will be no limits for the replacement of manual work by machinery or technological processes. We need look no further than the development of our arts and crafts as, for example, copperplate engraving, xylography, etc. Just as the most unpleasant jobs are often the most useful ones, so also our ideas regarding agreeable and disagreeable work, like so many other conceptions of the bourgeois world, turn out to be superficial ones, based on nothing but externals.

8. ABOLITION OF TRADE. REORGANISATION OF COMMUNICATIONS

As soon as all production in the future society is placed on a basis like the one outlined above, it no longer produces, as we already mentioned, "commodities", but only articles to satisfy society's needs. Trade ceases to exist except in such cases where contact with other peoples still living according to bourgeois principles makes trade along the old lines necessary, that is, trade of a kind that can only exist and is only justified in a society based on commodity production. This releases a large army of people of both sexes for productive activity. This large army, free to engage in production, now produces consumer goods and makes possible an increase in their consumption or else its utilisation promotes a reduction of the socially necessary labour time. Today these people subsist more or less as parasites on the product of the labour of others and often have to go to a lot of trouble and work diligently, this we shall not deny, without being able to eke out an adequate living. In the future society they will be superfluous in the role of merchants, innkeepers, brokers and intermediaries. Instead of the dozens, hundreds and thousands of shops and trading establishments of all sorts, which every community now has in proportion to its size, there will be large municipal supply centres, elegant markets,

whole exhibitions, requiring relatively small administrative staffs. All trading activity becomes a centralised, purely administrative activity, which will involve extremely simple functions and which will be simplified still further through the centralisation of all social institutions. The entire communications system will undergo a similar reorganisation.

The telegraph and telephone systems, railways, postal service, river and marine fleets, trams, lorries and cars, airships and other flying apparatus—and whatever kinds of contrivances and vehicles there may be which make up society's communications—now become *social* property. In Germany many of these institutions, such as the postal services, the telegraph and telephone systems and most railways are already state institutions, their transformation into social property is only a formality. No private interests will be hurt in these cases. If the state continues to direct its efforts in the present direction, so much the better. But these state-administered establishments are *not* socialist establishments, as some mistakenly assume. They are establishments which are exploited by the state in just as capitalistic a way as if they were in the hands of private entrepreneurs. Neither the officials nor the workers employed in them gain any special advantage therefrom. The state treats them just as any private entrepreneur; when, for example, orders are issued in the establishments of the imperial fleet and the railway administration not to take on workmen over 40 years of age, this measure vividly demonstrates the class nature of the state as a state of exploiters, and cannot but incense the workers with indignation against the state. These and similar measures that proceed from the state in its role as employer are much worse than they would be if they proceeded from a private entrepreneur. As compared with the state, the latter is a small employer, and the employment he denies may be granted by another. The state, on the other hand, in its capacity of monopolistic employer, can by such rulings at one stroke reduce thousands of people to misery. That is not socialist, it is capitalist behaviour, and the socialists have every reason to take steps to prevent modern state establish-

ments being regarded as socialist establishments and as the realisation of socialist aspirations.

Just as the millions of private employers, merchants and middlemen of all kinds will be replaced by big centralised establishments, so the entire transport system will also assume a new form. The millions of small shipments, which are sent every day to almost as many proprietors and which lead to a great waste of work, time and materials of every sort, will be replaced by large shipments dispatched to municipal depots and production centres. Thus, the work is greatly simplified in this sphere as well. As, for instance, the transportation of raw materials to an establishment employing a thousand workers is a much simpler undertaking than transporting them to hundreds of scattered small enterprises, so centres of production and distribution for whole communities, or their parts, will make possible considerable economies of all kinds. This will benefit the whole of society and *every individual* as well, for communal and personal interests will coincide. The face of our production centres, of the communication system and, especially, of our habitations will, as a result, be completely changed and they will acquire a much more pleasing appearance. The nerve-racking noise, hustle and bustle of our big cities with their thousands of vehicles of all sorts will in the main be done away with. Road-building, street-cleaning, the whole system of housing and living conditions, and the intercourse between people will all be radically transformed. It will be easy to carry out hygienic measures impossible today, or possible only in part and at great cost, which, more often than not, are undertaken only in the quarters of the rich.

The system of communications under such conditions is bound to attain the highest level of perfection, perhaps aviation will then become the chief means of transportation. The latter are the arteries that conduct the entire exchange of products—the blood circulation—through the whole of society, that facilitate personal and mental intercourse between people, and they are highly suitable to establish an *equal level* of well-being and education throughout society. The

extension and ramification of the most perfect means of transportation to the remotest corners of the land is, therefore, *a necessity and a matter of general social interest*. The tasks confronting the future society in this field vastly exceed those which our present society can take upon itself. This greatly perfected system of communications will also promote the decentralisation of the vast numbers of people now crowded into the big cities and industrial centres, and their redistribution over the whole country; it will thus become a factor of decisive importance in promoting health as well as spiritual and material progress.

II SOCIALISM AND AGRICULTURE

1. ABOLITION OF PRIVATE OWNERSHIP OF LAND

Alongside with the means of production and communication, land—the primary material of all human effort and the basis of all human existence—belongs to society. At its advanced stage society takes back what it originally possessed. Among all peoples that have reached a definite level of culture land is *communal property*. Communal property form the basis of every primitive socialisation, which would be impossible without it. It is only through the rise and development of private property and the *forms of domination* connected with it, that communal property is abolished in the face of grim struggle and is usurped as private property. The robbery of the land and its transformation into private property constituted the prime cause of the bondage that has passed through all possible stages, from slavery to the “freedom” of the wage-worker in our century, until, finally, the enslaved, after thousands of years of development, reconvert the land into common property.

The importance of land to human existence is such that in all social struggles of the world—in India, China, Egypt, Greece (Cleomenes), Rome (the Gracchi), the Christian Middle Ages (religious sects, Münzer, the Peasant War), in the empires of the Aztecs and Incas, in the social movements of modern times—the ownership of land has always been the principal demand of militants. At present, too, common ownership of land is advocated by such people as Adolf Samter, Adolf Wagner, Dr. Schäffle, Henry George and others, who do not want to hear anything about common ownership in other domains.

The well-being of the population depends primarily on

the cultivation and exploitation of the land. To raise the cultivation of the land to the highest possible level is eminently a matter of public concern. Such development is impossible where private ownership holds sway. The most rational exploitation of the land depends not only upon the way it is cultivated; there are also other factors to be considered, which neither the biggest individual owner nor the most powerful association can cope with, factors which in some cases transcend even the framework of the state and should be attended to on an international scale.

2. LAND IMPROVEMENT

Society must consider land as a whole—its *topographic* features, its mountains, dales, forests, lakes, rivers, ponds, heaths, swamps, moors and bogs. In addition to the geographical situation which cannot be modified, these topographic features exert certain influence on the climate and the qualities of the soil. Here is an immense field of activity in which a lot of experience can still be gathered and a mass of experiments have to be made. What the state has done in this direction up to now is not enough. First, it allots only small funds to these purposes and, besides, even if it did wish to apply itself to this task in earnest, the big landlords, who have the decisive say in legislation, would prevent it from so doing. Nothing can be achieved in this field without major encroachments on private property. But the existence of the state rests on the declaration of the “sacredness” of private property, the big landlords are its main prop, and, therefore, it lacks the power to act in the indicated direction. Vast and extensive schemes for land improvement, afforestation and deforestation, irrigation and drainage, for mixing soils, contour modifications, planting, etc., would have to be launched, in order to attain the highest possible level of land fertility.

A matter highly important to the state of land cultivation is an extensive, systematically planned network of rivers and

canals, which must be organised according to scientific principles. Although the question of cheaper transportation on waterways—such an important issue in modern society—would be of little consequence for the new society, waterways deserve serious attention, since they are a convenient means of transportation, requiring only a minimum expenditure of effort and material. The most important aspect of the system of rivers and canals is the fact that they are extensively used for drainage and irrigation, for transporting fertilisers and materials necessary for land improvement, as well as for despatching harvested crops, etc.

Experience shows that arid lands suffer much more from cold winters and hot summers than well-watered ones, which is why coastal regions only experience climatic extremes in exceptional cases. Climatic extremes are not advantageous or pleasant for either plants or men. An extensive canal system combined with proper forestry regulations will undoubtedly produce favourable results here. Such a canal system, in conjunction with the building of large reservoirs for the collection and storage of large quantities of water, would be of great benefit when thaws or heavy rainfalls make rivers and streams swell and overflow. Similar installations would also be needed for mountain rivers and mountain streams. Flood devastation would then be impossible. Wide expanses of water with their greater evaporation potential would also in all probability promote more regular rainfall. Moreover, installations of this kind would make it possible to set up pumping and lifting gear for the extensive irrigation of land, whenever it would prove necessary.

Large tracts of land hitherto almost completely barren could be transformed into fertile regions by means of artificial irrigation. Where sheep now can barely find enough to eat, and at best consumptive-looking pine-trees raise their thin branches heavenward, rich harvests could grow and a large population could find ample food and enjoyment. Thus, for example, it is only a question of labour expenditure to transform the vast sand tracts of the Mark, the "dust-box of the holy German Empire", into a fertile Eden. This was also

pointed out by one of the lecturers in a report read on the occasion of the German Agricultural Exhibition in Berlin in the spring of 1894.¹ To build the necessary canal and irrigation installations and carry out land-improvement measures, soil mixing, etc., are matters beyond the landowners of the Mark, and thus vast lands, just outside the gates of the imperial capital, remain in a state of backward cultivation that will seem inconceivable to future generations. Again, vast tracts of swamps, moors and marshes could be drained and reclaimed for cultivation both in the north and south of Germany. The waterways could also be used for fish-farming and would provide a rich source of food; moreover, they would furnish opportunities for the installation of the most attractive bathing establishments in communities where there are no rivers.²

The effectiveness of irrigation can be illustrated by the following few examples. In the vicinity of Weissenfels, 7.5 hectares of well-watered meadow land yielded 480 centners of after-grass, while five contiguous hectares of meadow land of the same quality, but unirrigated, yielded only 32 centners. Thus, the former had a crop more than ten times as large as the latter. Near Riesa in Saxony, the irrigation of 65 acres of meadow land raised net profits from 5,850 to 11,100 marks. According to Buchenbenger, the irrigation of the barren, sandy Bocker Heath on the right bank of the Lippe, which required an outlay of 124,000 marks, transformed a plain that had formerly been almost completely unproductive but now yields a gross annual profit of about

¹ An official report on the Chicago World Exhibition also reads: "The utilisation of water for the cultivation of both fruit and vegetables is to be increasingly aspired to, and water-supply associations with this end in view could also turn our deserts into paradises."

² "For example, in Bohemia, one of the best cultivated areas of the Austrian Empire, 656,000 hectares of arable land, that is, a quarter of its entire agricultural land, requires draining, while a third of the 174,000 hectares of meadow land is said to be either too dry or too wet. The state of affairs is naturally much worse in areas which are generally backward in economic development, such as Galicia." Dr. Eugen von Philippovich, *Volkswirtschaftspolitik*, S. 97, Tübingen, 1909.

400,000 marks. Land-improvement measures in Lower Austria, which required an outlay of one million crowns, raised the area's revenue by about six million crowns; thus, the heavy construction costs proved worthwhile. Besides the Mark, there are other areas in Germany, where the soil consists mainly of sand, that yield but mediocre returns even after a very wet summer. Should these areas be intersected and irrigated by canals, and their soil improved, within a short time they would yield five to ten times greater returns. There are cases in Spain where the yield of well-watered soil exceeds that of unirrigated land thirty-seven times over. Hence, let there be water and new masses of food will be conjured up out of the soil.

Rarely a year passes without there occurring at least once or twice, and sometimes more frequently, more or less serious floods caused by streams and rivers overflowing in various provinces and states of Germany. Large tracts of highly fertile soil are then washed away by the force of waves and others are buried for years under sand, stones and debris, or else made barren forever. Whole plantations of fruit-trees, cultivated over decades, are uprooted. Houses, bridges, streets and dams are washed away, railways ruined, human lives sacrificed, cattle drowned, land-improvement installations destroyed and crops devastated. Vast tracts of land, threatened by frequent floods, are either not cultivated at all or very sparsely, so as to avoid further losses. Extensive ravaging of forests, especially on mountains, particularly on the part of private owners, aggravates the danger. The senseless ravaging of forests for the sake of profit is said to be responsible for the decrease in the fertility of the soil in the provinces of Prussia and Pomerania, in Carinthia and Styria, Italy, France, Spain, Russia, etc.

The destruction of forests in the mountains frequently results in inundations. The floods in the Rhine, Oder and Vistula valleys are ascribed mainly to the destruction of forests in Switzerland, Galicia and Poland respectively. The same factor is responsible for the frequent floods in Italy, namely those in the Po Valley. Madeira, large parts of Spain, the

most fertile provinces of Russia, and extensive, once abundant and fertile lands in Western Asia have lost most of their fertility for the same reason.¹

At long last bourgeois society, too, has understood that the time has come to put an end to indulgence and tolerance in this field and that the introduction of rational measures on a large scale can transform the forces destroying land culture into such as promote it. Thus, work has started on the building of large barrages in order to collect enormous quantities of water and use its power to produce electricity for industry and agriculture. Bavaria, in particular, is building barrages for mountainous rivers and streams on a vast scale in order to obtain power for the electrification of its railways and for various industrial establishments. The agrarian Bavaria of old is thus gradually being transformed into a modern industrial land.

3. TRANSFORMATION OF SOIL CULTIVATION

It goes without saying that these enormous problems cannot be solved in a flash, but the new society will apply all powers at its command to their solution, because its *sole* mission will be to solve *problems of civilisation* and to *tolerate no obstacles* on the way to this goal. In due course it will solve problems and accomplish feats inconceivable to the present-day society, because the very thought of them would set their heads spinning.

Soil cultivation in general will be vastly improved through these and similar measures. In addition to the considerations discussed above, there are others relevant to the improvement of land utilisation. Today many square miles are sown to potatoes, which are used mainly for distilling large

¹ According to Schwappach, forests are extremely useful because they bind the soil, especially in mountainous areas, by preventing the washing away of land, as also in plains by holding down loose sand. Deforestation is one of the chief causes responsible for the arable land in Russia being covered with sand.

quantities of brandy, consumed almost exclusively by our poor population living in want and poverty. Brandy is the only stimulant and "worry-chaser" they can get. The civilised people of the new society will not consume brandy, the soil and its tillers will be freed for the production of wholesome food. Again, we have already mentioned the cultivation of sugar-beet and the manufacture of sugar for export. More than 400,000 hectares of our best wheat land are used each year to grow sugar-beet in order to supply England, Switzerland, the United States, etc. The countries whose climate favours the cultivation of sugar-cane are unable to compete. Our regular army, scattered production, scattered commerce, scattered agriculture, etc., require millions of horses and corresponding fields for feeding them and for rearing colts. Completely transformed social and political conditions will in the future free the bulk of the land used for this purpose. Once again, large areas and many hands are gained for other purposes. Of late extensive fields, covering many square kilometres, are being withdrawn from agriculture and populated centres are being razed to the ground, because the new long-range firearms and changed combat tactics require firing ranges and training grounds in which whole divisions are able to manoeuvre. All this comes to an end, too.

The vast field of agriculture, forestry and irrigation has long since been a subject dealt with in a spate of writings. No branch has been left untouched: forestry, irrigation and drainage, cultivation of cereals, pulses and tubes, fruit, berries, flower and decorative plants, vegetable gardening, the cultivation of fodder crops for stock-breeding and of pastures, rational methods for breeding cattle, fish, poultry and bees, the utilisation of fertilisers and manure, the realisation and utilisation of agricultural and industrial by-products, chemical soil analysis to establish its suitability for various crops, seed tests, crop rotation, machinery and implements, the rational layout of farm buildings of all sorts, weather conditions, etc.—everything has been made the subject of scientific discussion and investigation. Hardly a day goes by

without new discoveries and inventions being made which lead to improvements and refinements in one of the above fields. Since Thaer and J. V. Liebig, soil cultivation has become a science, indeed, one of the leading and most important sciences, which has assumed a scope and importance equalled in few fields of material production. But, if we compare this enormous progress in all spheres with the actual state of our agriculture, *it must be admitted that up to now only a fraction of the private owners has been able to turn the progress made to any advantage*, and that all have their private interests in view without paying any heed to the commonweal. The vast majority of our farmers, one might say 99 per cent of them, are not even in a position to use the advantages science and technological advance offer them: they lack the means or the knowledge, or both. Here the future society will find a field of action in which ample theoretical and practical groundwork has already been done—it only has to provide the proper organisation in order to attain the most impressive results.

4. LARGE-SCALE AND SMALL-SCALE PRODUCTION. THE DEVELOPMENT OF ELECTROCULTURE

While the opinion that, owing to the personal diligence of the small producer and the members of his family, small-scale production is able to compete with large-scale production still lingers on in socialist circles, experts have long since taken a different view. Let the peasant through his own and his family's excessive efforts accomplish as much as he wants, yet from the viewpoint of a man of culture his fate is to be pitied. No matter how much he may accomplish through over-exertion and self-denial, modern machinery and the science of soil cultivation accomplish more. Notably, the utilisation of machinery and science alone is able to make also the peasant a highly cultured man, whereas today he is but a slave of his property and a helot of his creditors.

The benefits large-scale production in agriculture offers when all its advantages are put to rational use are immense. First of all, large-scale production means a considerable extension of the area available for cultivation, because of the removal of the vast number of roads, foot-paths and boundary lines, which the parcelled holdings of today require. The abolition of these tiny holdings will also save a vast amount of time now wasted. Fifty people engaged in large-scale production, even if we disregard the more rational means of labour the use, can easily accomplish very much more than fifty persons engaged in small-scale production. Only in large-scale production can the labour force be grouped and organised in the most rational way. To this should be added the enormous advantages offered by the use of all sorts of machinery and improved equipment, by the industrial utilisation of the crop, and by more rational methods for rearing stock and poultry, etc. Particularly great is the advantage obtained from the use of electric drive in agriculture, which places all other cultivation methods in the shade.

P. Mack¹ notes that mechanisation yields a saving of over 5,000 horse days, and that a single investment of a capital of about 40,000 marks will cut the cost of the product by over 12,000 marks or by 48 marks per hectare, this excluding the additional produce obtained as a result of the introduction of subsoil ploughing, as also from the more accurate cultivation by machinery.²

The additional yield of cereals that would be obtained after subsoil ploughing is estimated at 20 to 40 per cent,

¹ P. Mack, Althof-Ragnit, retired cavalry captain and estate owner, *Der Aufschwung unseres Landwirtschaftsbetriebs durch Verbilligung der Produktionskosten. Eine Untersuchung über den Dienst, den Maschinentechnik und Elektrizität der Landwirtschaft bieten*, Königsberg, 1900.

² Campbell's subsoil plough which is reported to have achieved truly astounding results in the barren zones of North America has assumed major importance in recent years. The striving to save labour has led to the designing of conveyor installations for the threshing and elevation of straw, etc. This same labour shortage prompts the further utilisation of labour-saving machines, such as potato sorters, potato planters, roller dryers, hay loaders, swath loaders, etc.

while the yield of root crops would increase also, often by as much as 50 per cent. If the average increment is reckoned at a mere 20 per cent, this would provide an additional income of 55.45 marks per hectare on the given estate, which, together with the already mentioned saving, would bring the total to 103.45 marks per hectare. Assuming that the price of land is 800 marks a hectare, the extra profit amounts to 13.5 per cent. Thus, the aim is to create the necessary power stations to provide energy for agriculture. Then all the machinery in operation could be driven, and heat and light produced as well. In addition to illuminating houses, streets, stables, barns, cellars, warehouses and factory buildings, electric installations could, where necessary, also be used to gather in the harvest after dark. Mack has calculated that the universal electrification of agriculture would make it possible to do without two-thirds of the draught animals now used in our agriculture (that is, 1,741,300 head), which would provide a net profit of 1,002,989,000 marks a year. If the expenditure on electric power is deducted from this figure, the saving would amount to about 741,794,000 marks a year.

The utilisation of electric drive will make agriculture increasingly assume the features of a purely technical, industrial process. The manifold uses of electricity in agricultural production are illustrated in the following comparison¹:

An electric motor can drive:

1. Machines, which raise the gross yield: a) for the tilling of fields: cleaners for seed corning, grain graders, electric ploughs (design completed); b) for the harvest: mower-binders (under construction), potato harvesters (available with all possible improvements), irrigation installations.

2. Cost-reducing machinery: a) hoisting equipment, unloading equipment in barns, elevators for the conveyance of grain and straw to stacks and barns, as well as hay up into lofts, sack-lifts, pumps for liquid manure; b) transport equip-

¹ Kurt Krohne, "Die erweiterte Anwendung des electrischen Betriebs in der Landwirtschaft". *Elektrotechnische Zeitschrift*, 1908, Hefte 39 bis 41.

ment; trough conveyors and conveyor belts, pneumatic installations for the conveyance of grain, field conveyors, windlasses and winches for lifting heavy loads; c) processing equipment: straw presses, grinding mills, chaff-cutters for marketable produce.

3. Machines for agricultural production: a) distillery equipment and equipment for the manufacture of starch, all-purpose water pumps; b) dairy equipment: milk coolers, separators, churns, mixers, presses, etc.; c) saw mills, circular and frame saws; d) cartwright's machinery, band saws, drilling machines, turning lathes, wheel machines.

4. Equipment for preparing livestock fodder: chaff-cutters, beet-cutters, coarse grinding mills, potato, oat and other crushers, water pumps.

Enquiries have shown that about 15 per cent of all agricultural work can even now be carried out with the help of electric motors, thus saving time and plant.

It was found that the hours of manual labour required for the threshing and preparation for dispatch of 1,000 kilograms of grain is as follows:

	Working hours
1. If all work is manual	104
2. If small threshers with winches and cleaners are used	41.4
3. If threshers with 20 h. p. electric motors are used	26.4
4. If big threshers with electric motors, self-chargers, chaff and waste blowers, straw presses and elevators driven by a 60 h. p. motor are used	10.5

Today nothing stands in the way of a general application of the electric plough in agriculture. Electric ploughs, like electric railways, have already reached a high degree of perfection. The heavy and expensive steam plough is rational only for large areas and for subsoil ploughing. It is designed first and foremost to obtain higher yields of root crops.

The electric plough, on the other hand, can be used both for deep and shallow ploughing and is applicable also in medium-sized farms. It makes possible the cultivation of steep slopes, where it would be difficult to use even a horse-drawn plough. It is highly labour-saving, as can be seen from the comparison of ploughing costs for electric, horse-drawn, ox-drawn and steam ploughs.

	Cost per morgen of medium-depth ploughing				
	4	6	8	11	14
Horses	2.50	3.00	4.20	7.70	13.30
Oxen	3.65	4.65	5.80	7.90	10.20
Steam plough (hired)					
from	6.00	6.70	7.60	9.15	10.70
to	7.50	8.40	9.35	11.00	12.55
Steam plough (own)					
from	4.50	5.00	5.85	7.30	8.85
to	6.00	6.70	7.60	9.15	10.70
Electric plough, 40 h. p.	2.70	3.55	4.60	6.25	7.95
" " 60 h. p.	2.65	3.40	4.30	5.70	7.10
" " 80 h. p.	2.50	3.15	3.90	5.20	6.50

The facility with which electric power is transmitted and distributed, and the extremely simple servicing and maintenance of electric machines are decisive advantages for agriculture, since extensive areas can now be supplied with power through thin wires. And since there must be a network of power stations, a planned electric network, the electric drive in agriculture can very easily be combined with *electroculture*, with the direct influence of electricity on plant growth.

In recent years plant physiologists, and together with them agricultural experts, have worked most diligently to discover the effect of electricity on the growth and fertility of the most important crops, and especially on our cereals. This problem was solved by Professor K. S. Lemström, who died in 1906. He stretched an electric net over relatively large areas of arable land, in most of which he induced a positive charge

by means of induction machines, earthing the negative pole in the soil. During the whole vegetation period, or part of it, a weak current was fed to the experimental field, while a control field in the same area was left free of all influence. All these experiments made in the most diverse latitudes showed, first, that with proper care yields increased by 30-100 per cent, secondly, that the crops matured in a shorter period and, finally, that there was a considerable improvement in quality. This method, however, contained a number of practical shortcomings, which Newman, an English farmer, succeeded in eliminating. He was able to interest Oliver Lodge, the famed English physicist, in the Lemström method. According to a recent report by Lodge, who substituted a specially designed mercury rectifier for the induction machine used previously, experiments have been conducted from 1906 to 1908 on an area of 10 hectares. They have proved that the electric net can be fixed at a height of five metres above the ground without impeding the favourable influence on the yield, a height at which fully loaded carts can conveniently pass beneath it, and in general all agricultural work, such as the cultivation of root crops, can be carried out without any interference; whereas, according to Lemström, the network had to be no more than 40 centimetres above the plants it was to influence.¹ Various millers made comparative experiments in baking and have found that the flour from electrified wheat is much better than that from non-electrified wheat. It follows that the time is now ripe for the adoption of this new method in agriculture and gardening.

Fowler's steam plough, with two compound locomotives, requires for its rational exploitation an area of 5,000 hectares, which exceeds the total arable area of most peasant communities. It has been estimated that if, for example, all land under cultivation in 1895 had been worked with a wide range

¹ M. Breslauer, "Beeinflussung des Pflanzenwachstums durch Elektrizität". *Elektrotechnische Zeitschrift*, 1908, Heft 38, S. 1915. Breslauer is now at work on the construction of a small experimental installation near Berlin.

of machinery, and all the other achievements had been applied, this would have resulted in a saving of 1,600 million marks. According to Ruhland,¹ a successful fight against all corn blights alone would be sufficient to make Germany's present grain imports unnecessary. In his pamphlet *Weeds in our Fields and Pasture-Land* Dr. Sonnenberg of Worms reports that, according to an official enquiry in Bavaria, Bavarian agriculture loses 30 per cent of the harvest every year, because its fields are choked with weeds. Comparing two areas of four square metres each, one overgrown with weeds, the other free of them, Nowatzki noted the following results:

	Stalks	Grain	Straw yield
On the weedy area	216	180	239 gm.
On the weeded area	423	528	1,077 gm.

Dr. von Rümker, Professor at the Agriculture Institute of Breslau University, points out that statistics prove that scrupulous fertilisation is to all intents and purposes not practised in Germany's agriculture at all. Sowing and tilling are often carried out quite haphazardly, thoughtlessly, and with such imperfect and unsuitable implements that the yield of the effort and work remains negligible. *German farmers do not even carry out the simple task of sorting seeds.* Professor von Rümker shows in the table below the extent to which seed-sorting could raise the yield per hectare:

Wheat yielded	Grown from unsorted seed: per ha in kg.	Grown from sorted seed: per ha in kg.	Increment from sorted seed in kg.
Total harvest	8,000	10,800	+2,800
Grain	1,668	2,885	+1,217
Straw and chaff	6,332	7,915	+1,583
Total weight of harvest in hectolitres	77.2	78.7	+1.5

¹ Dr. G. Ruhland, *Die Grundprinzipien aktueller Agrarpolitik*, Tübingen, 1893, Lauppsche Buchhandlung.

The increment gained through sorting, therefore, comprises, according to this table, 1,200 kilograms of grain per hectare, which, valued at 15 marks per double centner, represents in terms of value 180 marks. If the cost of sorting is computed at a maximum of 4.40 marks, the *net gain on grain alone will amount to 175.60 marks per hectare, not counting the gain from straw and chaff. Comparing the results of his extensive cultivation experiments, Rümker further established that by choosing the most fertile varieties for every locality a higher average harvest could be obtained and gross incomes be increased as follows:*

Rye	300-700 kg. of grain or by	42-98	marks per ha
Wheat	300-800 " " " " "	45-120	" " "
Barley	200-700 " " " " "	34-119	" " "
Oats	200-1,200" " " " "	26-156	" " "

If we take the increment obtained through the seed-sorting and the correct choice of wheat varieties, the yield *in wheat production alone will be raised by 1,500 to 2,000 kg. of grain or by 220 to 295 marks per hectare.*

A work entitled *The Future of German Agriculture*¹ proves what enormous increments in yield could be obtained for all agricultural products if ample and proper fertilisation—the introduction of mineral fertilisers—superphosphate, and Thomas slag, kainite and phosphoric acid—should make the soil more fertile. The fields in Germany sown to wheat and rye could then well yield an average of 36 and 24 double centners per hectare respectively. Also a large part of the land now sown to rye could, with better fertilisation and cultivation methods, be used for wheat production, so that the average yield of agricultural land sown to grain—two-fifths wheat and three-fifths rye—could amount to 28.8 double centners per hectare. After the deduction of seed and inferior grain from this yield, 26 double centners would be left for public consumption. The 7.9 million hectares now

¹ By Kommerzienrat Heinrich Albert-Bieberich in collaboration with Homuth, teacher of agriculture, Friedenau-Berlin, 1901.

being sown to grain crops could be extended by about 1.5 million hectares of pastures, fallow land and waste land—heaths and moors¹—so that at an average yield of 26 double centners per hectare from a sown area of 9.4 million hectares, 251.92 million double centners of grain crops could be harvested. At an yearly per capita consumption of 175 kilograms *enough grain crops for 144 million people could be produced*. The 1900 census showed that Germany had a population of about 56,345,000, which means that already with the level of development attained by technology and science by that time, German soil could have supplied with grain a number of people two and a half times as large as Germany's population. With the present methods used to run the scattered private holdings Germany is compelled to import on an average a ninth of its total grain requirements. These results can be obtained only under communist production at the highest stage of development, but the above authors naturally give no thought to this. According to one of their calculations, the *increment* German agriculture would derive from intensive cultivation would be as follows:

Grain	145.1	mln.	double centners
Potatoes	444.0	"	"
Oats, barley, peas and beans	78.7	"	"
Meadow hay	146.2	"	"
Hay and fodder	110.0	"	"
Turnips	226.0	"	"

If we take into account that, according to Mack's above recommendations, the introduction of electric drive would also save a very large number of draught animals, this means that the number of slaughter cattle could be raised considerably and the land needed for them could be used to sow more crops for people.

Another field of agricultural activity that could be car-

¹ Of the available 5 million hectares of waste land, fallow land, pastures, etc., 4.5 million hectares have been put to account. The areas which will be afforested could on the other hand be transformed from woodland into arable land or pastures.

ried on on a very different scale is poultry raising and egg production. Every year Germany imports eggs to the value of about 149.7 million marks (1907) and live poultry to the value of over 40 million marks. Breeding and farming in these different fields of agriculture are still extremely backward. In future, the concentration of stables, of all types of warehouses, cellars, forage and feeding installations, dung pits, etc., linked with the concentration of production, will not only save time, effort and materials but also impart advantages accruing from rational utilisation, which small and medium farms never enjoy today, and large ones only in rare cases. How insufficient are, for example, hygiene installations in the vast majority of stables, how imperfect the fodder installations and the facilities for the care of cattle and poultry! That cleanliness, light and air are needed by animals as much as they are by people and that they have a favourable effect on their state of health is a fact rarely appreciated by the 20th-century farmer. It is self-evident that the production of milk, butter, cheese, eggs, honey and meat will be carried on in much more rational, hygienic and profitable conditions.

The setting up of large covered premises, drying houses, etc., will make it possible to gather in crops in any weather conditions, and quick harvesting will obviate the enormous losses now so frequently sustained. According to Goltz, during a single harvest in adverse weather, from eight to nine million marks' worth of crops are ruined in Mecklenburg, and from twelve to fifteen million marks' worth in the Königsberg area.

5. FUTURE VINICULTURE

The cultivation of fruit and berries and gardening will in future also reach a level of development previously inconceivable. How much we still sin against fruit cultivation can be seen from the bad state of our orchards in most parts of Germany, and even in lands famed for their fruit-growing like Württemberg.

Through the application of artificial heat and moisture in large, covered premises, the large-scale cultivation of vegetables, fruit and berries will be possible in all seasons. The flower shops of our big towns display in mid-winter a variety of flowers that vies with that they stock in the summer. One of the most brilliant advances made in forced fruit cultivation is exemplified by the hot-house viniculture practised by Garden-Director Haupt in Brieg, Silesia, who has found many imitators and has himself had precursors in other countries, for example in England. The arrangement and the results obtained in that vineyard were so fascinatingly described in the *Vossische Zeitung* of September 27, 1890 that we have decided to give a few excerpts here. The paper wrote:

"The glass house 4.5 to 5 metres high occupies an area of approximately 500 square metres, that is, one-fifth of a morgen, and its walls face directly north, south, east and west. Twelve rows of double espaliers run from south to north, spaced 1.8 metres apart from each other, which simultaneously serve as supports for the flat inclined roof. In a bed 1.25 metres deep, on top of a bank of earth 25 centimetres thick, which contains a drainage system with vertical pipes to ventilate the soil—a bank whose very heavy beds are made loose, porous and fertile through the addition of chalk, crumbled masonry, sand, rotted manure, bone-meal and potash—Herr Haupt has planted on the espaliers 360 grape-vines of the variety that yields the finest grape-juice in the Rhinegau, that is, white and red Riesling, Tramin, white and blue Muscatel and Burgundy.

"In addition to openings in the side walls, ventilation of the premises is effected by 20-metre vents in the roof, which can be opened and closed and held in place in any weather conditions by means of a metal lever complete with spindle and winch. The vines are watered by 26 sprinklers fastened to 1.25-metre rubber hoses suspended from an overhead water main. Herr Haupt introduced at the same time a truly ingenious contrivance for the quick and thorough watering of his 'wine-hall' and his 'vineyard', namely, an *artificial*

rain device. High up, under the roof, are four long copper pipes containing small perforations at intervals of half a metre. The fine streams of water that spout upwards through these perforations strike small round sieves made of window gauze and pass through them to form fine sprays. A thorough sprinkling by means of the rubber hoses always requires several hours, while a mere turn of a tap is all that is needed for a soft refreshing rain to trickle evenly on the vines, the soil and the granite-paved paths. The temperature can be raised to 8-10°R above the outside air without any artificial heating, simply through the natural qualities of the glass house. In order to protect the vines from their most destructive and dangerous enemy—the vine-louse—should it ever appear, it is enough to close the drain pipes and to open all the taps of the water main. The resulting flooding of the vines is too much for the enemy. The glass roof and walls protect the hot-house vines from storm, cold, frosts, excessive rain; a fine wire netting above them—from eventual hail, and the artificial rain device—from drought. The vine-dresser of such a 'vineyard' is his own weather-maker and he can laugh at all the dangers from the incalculable whims and pranks of callous, cruel Nature, which always threatens to destroy the fruit of the wine-grower's efforts and toil.

"What Herr Haupt expected happened. The vines thrived splendidly in the constant warm climate. The grapes ripened fully and in the autumn of 1885 they yielded a juice that was in no way inferior to the grapes generally grown in the Rhinegau, as regards its high sugar and low acid content. The grapes thrived equally well the next year, and also during the bad year of 1887. On these premises, when the vines have reached their full height of 5 metres and carry plentiful clusters of swollen grapes right up to their very top, it will be possible to produce 20 hectolitres of wine annually and the cost per bottle of this noble wine will not exceed 40 pfennigs.

"There is nothing to prevent this new viniculture, promising high and steady returns, being conducted on a large scale like any other industry. Glass houses of the nature of

this one of one-fifth morgen could undoubtedly be built to cover areas of one morgen and be provided with the same facilities for ventilation, irrigation, drainage and rain-making, in which vegetation would also start several weeks sooner than in the open, and the grapes would be protected from May frosts, rain, and cold during blossom time, from droughts while they grow, from pilfering birds and grape thieves and from moisture while they ripen, from the vine-louse throughout the year, and the grapes could safely be left hanging on the vines until November and December. In his report, which was delivered in 1888 to members of the Society for the Promotion of Horticulture, who visited him, and from which I have borrowed much of the technical details in this description of the Haupt 'vineyard', the inventor and founder of this undertaking by way of conclusion outlined the following highly attractive prospects for the future: since this kind of viniculture could be carried on all over Germany, and in particular on otherwise unfertile, sandy and stony soil (as, for example, in the worst parts of the Mark), which can be used for cultivation and watered, the great significance 'viniculture under glass' represents for agriculture is evident. I should like to designate it as '*the viniculture of the future*'."

The author then goes on to say that the wine made from these grapes has received the highest praise from experts, and adds that "the vineyard affords sufficient space for the simultaneous cultivation of other profitable plants between the vines or next to them. Between every two vines Herr Haupt grows one rose bush, which blossoms at its best in April and May, and on the espaliers along the east and west walls of his greenhouse he grows peaches; the beauty of their blossom in April must lend a fairy-tale charm to the interior of this vine palace made of glass." Much attention has been given to this kind of fruit-growing particularly in Belgium. But in Germany this method of cultivation is also to be found on quite a large scale, for example, for growing pineapples.

There is nothing to prevent the setting up of similar establishments on a much wider scale for the most diverse cultures, so that we could enjoy the luxury of two or three har-

vests a year for many products. Today such undertakings are first and foremost a question of profitability, and their products are available only for the privileged members of society, who are able to pay for them. A socialist society knows no other criterion than the availability of labour, and if this is in sufficient supply, the work is carried out to the advantage of all.

6. MEASURES AGAINST SOIL EXHAUSTION

We thus see that even under present conditions the way is being paved for a complete revolution in the matter of human nourishment. *The utilisation of these discoveries is extremely slow because it is very much in the interests of the powerful classes—the landowners and their social and political props—to prevent this process gaining ground.* True, every Sunday in spring prayers are said in all churches for a good harvest, but if the harvest in all countries is a good one, prices drop sharply and this dismays the landowner. What is a boon to others is detrimental to his interests and he is therefore a secret enemy of every invention or discovery which is of advantage not to him alone but also to others. Our society is in every respect a house divided against itself.

To maintain the land in a state of fertility and increase that fertility is primarily a question of adequate fertilisers. The production of these is one of the most important tasks facing the new society as well.¹ Manure is for the soil what food

¹ "There is a recipe for ensuring the fertility of fields and the permanence of their yield; if this recipe is properly followed, it will be more remunerative than all others that have ever been used in agriculture before; it is as follows: every farmer taking a bag of grain, a centner of rape, or root crops or potatoes, etc., to town should, like a Chinese coolie, bring back from town a similar quantity (or if possible more) of the soil components absorbed by his crops and return them to the field, from which he took them; he should not despise a single piece of potato peel or a straw, but should remember that one of his potatoes lacks a piece of peel or one of his ears a stalk. His outlay in bringing them home is small and the investment is safe, a savings bank is no safer,

is for people and, what is more, just as every kind of food is not equally nourishing for man, *every* manure is not equally suitable for the soil. The land must be fed back exactly the same chemical ingredients it loses through the growing of a harvest, and it must receive a greater quantity of chemical substances preferably needed for the growth of the specific genus of plants. The study of chemistry and its practical application will therefore assume a scope unimaginable today.

Animal and human excrement contains chemical ingredients suitable for the reproduction of human food. Hence efforts should be made to see that it is properly collected and then distributed rationally. This is at present being greatly sinned against, especially in towns and industrial centres, which receive foodstuffs en masse, but return only a minimum of their waste and excrement to the soil. This means that estates located at considerable distances from towns and industrial centres suffer greatly from a lack of manure—for often the manure of human and animal origin available at the estate does not suffice because the people and animals there consume only part of the yield—and thus a system of soil-vandalism is practised that impoverishes the soil and impairs the harvest, unless the importation of artificial fertilisers compensates for the lack of natural ones. All countries which export agricultural products and do not import manure will sooner or later head for ruin through the impoverishment of the soil, as is the case with Hungary, Russia, the Danube Principalities, etc.

and no capital guarantees him a higher interest; *the returns from his field will double in as little as ten years*; he will produce more grain, more meat and more cheese, without expending more time and effort, and he will not experience constant anxiety about how to find new and unknown means, which there are not, to preserve the fertility of his field in some other way. . . . Old bones, soot, ashes, leached out or not, the blood of animals and waste of all kinds should be collected in special centres and prepared for distribution. . . . Governments and municipal police authorities should take care that a rational provision of lavatories and sewers prevent the loss of these materials." Liebig, *Chemische Briefe*, Leipzig und Heidelberg, 1865.

In the middle of the past century Liebig advanced his theory of artificial substitutes for humus and this led to the introduction of fertiliser concentrates. Schulze-Lupitz proved that, although some plants do not receive nitrogenous fertilisers, they nevertheless enrich the soil with nitrogen, a phenomenon solved and explained by Hellriegel. He proved that myriads of bacteria, in symbiosis with certain pulses, supply to plants directly from the atmosphere the nitrogen necessary for their growth¹. While agrochemistry since Liebig's discoveries constitutes one side of scientific agriculture, agrobacteriology constitutes the other. In addition, Germany has at her disposal potash and kainite deposits, Thomas slag, superphosphate and phosphoric acid which provide inexhaustible sources for the production of artificial fertilisers, whose correct utilisation combined with rational cultivation methods make possible the production of enormous quantities of food.

An idea of the importance of these various artificial fertilisers can be gained from the fact that in 1906 Germany consumed an equivalent of 300 million marks' worth, including 58.3 million marks' worth of sulphate of ammonia, and 120 million marks' worth of Chile saltpetre, while the rest was spent on Thomas slag and superphosphate, salts of potash, guano and others. Of these nitrogenous fertiliser is the most important. Its enormous effect can be seen from the following: Wagner has shown that in comparison with yields after full fertilisation, the oat harvest in Hessen dropped by 17 per cent when phosphoric acid was deficient, by 19 per cent when there was a potash deficiency, but by 89 per cent when there was a lack of adequate nitrogen. On the basis of all these experiments, it was established that from one hectare the following yearly yield is obtained: after full fertilisation—96 marks, after fertilisation without adequate potash—62 marks, after fertilisation without adequate phosphoric

¹ "Die deutsche Landwirtschaft an der Jahrhundertwende." Festrede, gehalten an der Königlichen Landwirtschaftlichen Akademie am 12. Januar 1900 von Dr. Max Delbrück.

acid—48 marks, with a nitrogen deficiency—5 marks. It has been computed that if Germany were to use double the present quantity of nitrogenous fertilisers, she would not only be able to satisfy all her grain and potato requirements but would also have a considerable amount left over for export. And the main sources of these valuable fertilisers, Chile saltpetre deposits, as also the guano deposits, are being quickly exhausted, while the demand for nitrogenous compounds is constantly growing in Germany, France and England, and in the past ten years in the U.S.A. as well. The English chemist William Crookes brought up this question as far back as 1899, and referred to it as a matter of much greater importance than the possibility of an imminent exhaustion of the British coal mines. He, therefore, considered the solution of the problem of manufacturing nitrogenous fertilisers from the enormous nitrogen reserves in the atmosphere to be the main task of chemistry. One need but consider that the amount of air above each square centimetre of soil weighs about a kilogram and that four-fifths of it are nitrogen, whence it is easily computed that the nitrogen content of the Earth's atmosphere weighs about 4,000 million tons. Compare this with the present annual consumption of saltpetre which corresponds to about 300,000 tons of nitrogen. If nitrogen were not compensated at all, the reserves in the atmosphere would suffice for the production by chemical compounding of nitrogenous fertilisers to cover the world's present saltpetre requirements for more than 14,000 million years.

This problem has already been solved. As far back as 1899, A. Frank and N. Caro obtained calcium cyanamide by means of the reaction of atmospheric nitrogen with calcium carbide (lime and coal) at high temperatures. The product in an unrefined state contained from 14 to 22 per cent of nitrogen. The new fertiliser has been placed on the market under the name of lime nitrogen. But this is not the only way to obtain nitrogen. The Norwegians C. Birkeland and S. Eyde succeeded in 1903 in converting atmospheric nitrogen directly into nitric acid by burning it electrically. This method gives a product that is in no respect inferior to Chile

saltpetre and for some soils even superior to the latter. Of late it has appeared on the German fertiliser market under the name of "Norgespeter". In 1905, Otto Schönherr succeeded in discovering a method which is technically superior even to that of Birkeland-Eyde. In addition to electric power, only the cheapest materials are required—water and limestone. Conversely, the manufacture of lime nitrogen requires coal as well, and the necessary nitrogen cannot be applied in the form of air but must first be separated from it. Thus, a new fertiliser has been introduced in agriculture that is produced by a purely technical industrial process, and is available in inexhaustible quantities.¹

According to A. Müller, a healthy adult secretes on an average 48.5 kilograms of solid and 438 kilograms of liquid excrement a year. Estimated in accordance with current fertiliser prices and provided there is no drop in value due to evaporation, etc., this excrement has a money value of about 5.15 marks. The main obstacle in the way of maximum utilisation of this excrement is the lack of suitable and adequate collecting depots, and the high transportation costs. A large portion of excrement in towns is thrown into our rivers and streams, and pollutes them. The refuse from kitchens, small workshops and factories, which could be used as manure, is also usually wasted most frivolously.

The future society will find ways and means to put a stop

¹ According to Professor Bernthsen: "Über Luftsalpetersäure", Speech delivered at the Seventh International Congress in London, *Zeitschrift für angewandte Chemie*, 1909, Heft 24. Since new industry requires cheap water-power to produce electricity, the Baden Aniline and Alkali Factory and other German chemical plants, in partnership with the Norwegian-French company formed by Birkeland-Eyde, secured for themselves suitable water-power in Norway. Two companies, each with a share capital of 16,000,000 crowns, were formed for the exploitation of Norwegian water-power and the manufacture of saltpetre. In addition, the Baden Aniline and Alkali Factory has applied to the Bavarian Government for a concession to carry out its plan to harness about 50,000 electric h.p. from the Alz and construct a factory near Burghausen in south-east Bavaria.

to this waste. It will find it easier to resolve this problem, largely for the reason *that big towns will gradually cease to exist and the population will decentralise.*

7. ABOLITION OF THE ANTITHESIS BETWEEN TOWN AND COUNTRY

No one can consider the present growth of our big cities a healthy phenomenon. The obtaining industrial and economic system constantly draws large masses of the population to the big towns.¹ They are the main seat of industry and trade, it is in them that communications converge, that the owners of great wealth have their headquarters, and that central authorities, military staffs and high courts are to be found. It is in them that large educational institutions, academies of art, places of entertainment, exhibitions, museums, theatres, concert halls, etc., are concentrated. Thousands are drawn there by their professions, thousands by the promise of pleasure, and many more thousands by the hope of easier earnings and a more pleasant life.

But, figuratively speaking, this growth of big towns re-

¹ According to the census of June 12, 1907, Germany had 42 big towns of over 100,000 inhabitants each. In 1816 there were only two such towns. In 1871, there were only eight. In 1871, Berlin had about 826,000, in 1900—1,888,000, in 1905—2,040,148 inhabitants; the population has thus more than doubled (a 147 per cent growth!). Greater Berlin had in 1871—875,328, in 1900—2,469,009 inhabitants. In 1907, 42 big towns had a total of 11,790,000 inhabitants and their share of the total population now accounts for some 19 per cent. Some of these big towns had to include in their municipalities contiguous industrial suburbs, which had populations large enough to be towns themselves, and this made their population figures rise sharply. Between 1885 and 1905, the population of Leipzig grew from 170,000 to 503,672; of Cologne from 161,000 to 428,722; of Magdeburg from 114,000 to 240,633; of Munich from 270,000 to 538,983; of Breslau from 299,000 to 470,904; of Frankfort on the Main from 154,000 to 334,978; of Hanover from 140,000 to 250,024; of Düsseldorf from 115,000 to 253,274; of Nuremberg from 115,000 to 294,426; of Chemnitz from 111,000 to 294,927; of Essen from 65,074 to 239,692 inhabitants, etc.

sembles that of a person whose waistline steadily grows while his legs grow thinner and are finally no longer able to carry the burden. All the villages, in the direct vicinity of these cities, as the proletariat starts to concentrate in them, also come to resemble towns. These communities, for the most part short of funds, are obliged to introduce the highest possible taxation, but are still unable to satisfy the demands made on them. When the gap between them and the big towns finally closes they collide as does a planet that moves too near the sun. This does not improve the living conditions in either the one or the other. They grow worse as a result of the further crowding of already inadequate housing. These accumulations of large masses of people, an inescapable feature of modern development, constitute, to a certain extent, revolutionary centres, but they will have fulfilled their mission once the new society has been established. Their gradual dissolution then becomes necessary, *the current will then run the other way—the population of the big cities will migrate to the country, form new communities there, adapted to the changed conditions, and will combine industrial with agricultural activity.*

This migration will begin as soon as urban populations, due to the advance of means of communications, production establishments, etc., are in a position to transfer to the country all their habitual benefits of civilisation, to set up their educational establishments, museums, theatres, concert halls, public facilities, etc., there. People will enjoy all the advantages of city life but *will be spared its disadvantages*. The whole population will live in much healthier and more pleasant surroundings. The rural population will participate in industry, the industrial population in agriculture and gardening, a variety in occupation at present only enjoyed by a few, and then in the main only at the cost of an excessive outlay of time and effort.

As in all other domains, in this field, too, the bourgeois world is anticipating this development by transferring each year an increasing number of industrial establishments to rural areas. The unfavourable living conditions in big towns

—high rents, higher wages—force many owners to undertake such transfers. On the other hand, the big landowners are increasingly becoming industrialists, sugar manufacturers, distillers, brewers, cement, pottery, brick, woodwork and paper producers. Even today tens of thousands live in the suburbs of big towns, when the transport facilities make such a way of life possible.

Decentralisation will also abolish the existing antithesis between the rural and the urban population.

The peasant, this helot¹ of modern times, who until now has been cut off from all higher cultural development owing to his isolation, will become a free individual because he will then be a highly cultured man.² The wish Count Bismarck once expressed, that he might see the big towns destroyed, will be fulfilled, only in a sense other than he expected.³

¹ *Helots*—the agricultural labour force of ancient Sparta, whose position was one of outright servitude.—*Ed.*

² Professor Adolf Wagner is quoted in the *Lehrbuch der politischen Ökonomie* by Rau as saying: "Small private holdings in land form an economic basis that can be replaced by no other for a highly important part of the population, for the independent, self-sustaining peasantry with its peculiar socio-political position and function." If the author is not enthusing over the small farmer in order to please his conservative friends *à tout prix*, he must consider our small peasant a very poor person. Under *present* conditions the small peasant is almost inaccessible for higher culture: he drudges away at his hard work from sunrise to sundown and often lives worse than a dog. The meat, butter, eggs, milk he produces are not for him, he produces them for others, and under present conditions he cannot raise himself to a better level of existence and, therefore, becomes an element *impeding the progress of civilisation*. Who favours retrogression because he profits from it may find satisfaction in the continuance of this social stratum; human progress, however, demands that it disappear.

³ At the Erfurt "Union Parliament" of 1850, Count Bismarck thundered against the big towns "as hotbeds of revolution", which should be razed to the ground. He was right—bourgeois society produces its own "grave-diggers", the modern proletariat.

III

WITHERING AWAY OF THE STATE

A perusal of the preceding chapters shows that with the abolition of private ownership of the means of production and their conversion into social property, the mass evils which bourgeois society reveals at every turn and which are becoming ever more intolerable will gradually disappear. Domination by one class comes to an end, and society carries on all its activities according to a plan it itself draws up, it directs and controls itself. Just as the abolition of wage-labour rules out exploitation of man by man, the same thing will happen with swindling and cheating, the adulteration of food, stock-exchange speculation, etc. The halls of the temples of Mammon¹ will stand vacant, for government securities, shares, promissory notes, pawn tickets, etc., will have become waste paper. Schiller's words: "Let all old scores be wiped off, let the whole world be reconciled", will have become reality, and the biblical saying: "In the sweat of thy face shalt thou eat bread" will now apply also to the knights of the stock exchange and the drones of capitalism. The work they will have to perform as equal members of society will not oppress them and will substantially improve their physical well-being. The responsibility for property, which, according to the pathetic assurances of our employers and capitalists, is often harder to bear than the insecure and needy lot of the worker, will be taken from them forever. Stock-exchange jobbers will be spared the excitement of speculation which causes so many heart disorders and strokes and renders them

¹ In Christian writings Mammon, an evil power, is the personification of cupidity and the cult of worldly wealth.—*Ed.*

nervous wrecks. *Freedom from worry* will be their lot and that of their progeny, and they will feel all the better for it.

With the abolition of private property and class contradictions the state gradually withers away. "Whilst the capitalist mode of production more and more completely transforms the great majority of the population into proletarians, it creates the power which, under penalty of its own destruction, is forced to accomplish this revolution. Whilst it forces on more and more the transformation of the vast means of production, already socialised, into state property, it shows itself the way to accomplishing this revolution. . . .

"The state was the official representative of society as a whole, the gathering of it together into a visible embodiment. But it was this only *in so far as it was the state of that class* which itself represented, for the time being, society as a whole: in ancient times, the state of slave-owning citizens; in the Middle Ages, the feudal lords; in our own time, the bourgeoisie. When at last it becomes the real representative of the whole of society, *it renders itself unnecessary*. As soon as there is no longer any social class to be held in subjection; as soon as class rule, and the individual struggle for existence based upon our present anarchy in production, with the collisions and excesses arising from these, are removed, nothing more remains to be repressed, and a special repressive force, a state, is no longer necessary. The first act by virtue of which the state really constitutes itself the representative of the whole of society—the taking possession of the means of production in the name of society—this is, at the same time, its last independent act as a state. State interference in social relations becomes, in one domain after another, superfluous, and then withers away of itself; the government of persons is replaced by the administration of things, and by the conduct of processes of production. The state is not 'abolished'. *It withers away*."¹

¹ Friedrich Engels, *Herrn Eugen Dührings Umwälzung der Wissenschaft*. Dritte, durchgesehene und vermehrte Auflage, S. 304 und 302, Stuttgart, 1894. (Frederick Engels, *Anti-Dühring*, Moscow, 1969, pp. 332-33.—Ed.)

Along with the state disappear its representatives: ministers, parliaments, regular armies, police and gendarmes, courts, lawyers and public prosecutors, prison wardens, tax and customs authorities, in a word—the whole political apparatus. Barracks and other military buildings, court and administrative premises, prisons, etc., will be turned to better use. Tens of thousands of laws, decrees and regulations will have become waste paper, and will possess only historical value. The great and yet so trivial parliamentary battles in which people with the gift of the gab imagine that by their speeches they rule and guide the world will disappear; they will make place for administrative collegiums and delegations, which will engage in organising production and distribution to ensure maximum efficiency, in establishing the volume of supplies needed, in introducing and applying rational innovations in art, public education, the communications system, the production process in industry and agriculture, etc. These are all practical, visible and tangible matters, which everyone approaches objectively, because he has no personal interests opposed to society. None is motivated by any other interest but that of the community which consists in arranging and producing everything in the most rational and most advantageous way.

The hundreds of thousands of former representatives of the state now take up the most diverse professions and devote their intelligence and efforts to multiplying the wealth and comforts of society. In future there will be neither political crimes and offences nor crimes against common law. Thieves will have disappeared, because private property has disappeared, and in the new society everyone will be able easily to satisfy his requirements by work. There will be no tramps and vagabonds, too; they are the product of a society based on private property and disappear together with it. Murder? Why? No one can enrich himself at the expense of another, and murder out of hatred and revenge is directly or indirectly linked with the state of society. Perjury, forgery, imposture, usurpation of inheritance, fraudulent bankruptcies? The private property in relation to and against which these crimes

could be committed simply does not exist. Arson? Who will seek joy or satisfaction in it when society takes from him all scope for hate? Counterfeiting? "Why, money is but an illusion", love's labour would be lost. Sacrilege? Nonsense; it will be left for the almighty and all-bountiful Lord to punish who should offend him, provided controversies about the existence of God continue.

Thus, all the cornerstones of the present "order" will become myths. Parents will describe them to their children like something out of the fairy-tales of long ago. Tales of the witch hunts and persecutions to which the adherents of the new ideas were once subjected will have the same ring for them that stories of the burning of heretics and witches have for us today. The names of all the "great" men who distinguished themselves by persecuting those who spread new ideas, and were applauded for it by their narrow-minded contemporaries, will have been forgotten, and may at the most be chanced upon by a historian perusing old documents. Unfortunately, we do not yet live in the happy times when mankind is able to breathe *freely*.

IV THE FUTURE OF RELIGION

As with the state, so with religion. It will not be "abolished". God will not be "dethroned", religion will not be "torn out of the hearts of people"; nor will any other of the foolish accusations against Social-Democrats with atheistic leanings materialise. Such absurdities the Social-Democrats leave to the bourgeois ideologists, who in the French Revolution resorted to such methods and, naturally, met with a pathetic fiasco. Religious organisations and with them the churches will gradually disappear without any violent assault or any suppression of beliefs.

Religion is the transcendental reflection of prevailing social conditions. In the measure that human development progresses, and society is transformed, religion is transformed along with it; to use Marx's phrase, religion is the striving after an illusory happiness for the people that stems from the social condition, *necessitating such an illusion*,¹ and it disappears as soon as the masses understand what genuine happiness is and see the possibility of its realisation. The ruling classes endeavour, in their own interests, to obstruct this understanding and, therefore, seek to preserve religion as a means of upholding their domination, which is most clearly expressed in the well-known statement: "Religion must be preserved for *the people*." In a society based on class domination this becomes an important official function. A caste forms which assumes this function and devotes all its ingenuity to preserving and enlarging this edifice, since it thereby enhances its own power and prestige.

¹ Karl Marx, *Zur Kritik der Hegelschen Rechtsphilosophie. Deutsch-Französische Jahrbücher*, 1. und 2. Lieferung, Paris, 1844.

Fetishism at the lowest stage of civilisation, in primitive social conditions, gives way to polytheism at a higher stage of development, and monotheism¹ at a still higher stage. It is not the gods that create men, it is men who make the gods or God for themselves. "In his own image he (man) created Him (God)", not the other way round. Monotheism, too, has already dissolved in an all-embracing, all-permeating pantheism and continues to fade away. The natural sciences have reduced the dogma of the creation of the Earth in six days to a myth; astronomy and mathematics have made heaven into a mere structure of air, and the stars in the firmament, on which the angels are enthroned, into planets and fixed stars, the nature of which excludes all angel life.

The ruling class, finding that its existence is threatened, clings to religion as the prop of all authority, just as every ruling class in the past has done.² The bourgeoisie itself does not believe in anything; in the whole course of its development, by means of modern science to which it itself gave birth, the bourgeoisie has been destroying faith in religion and all authority. Its faith is only a pretence, and the Church accepts the aid of this false friend because it is in need of it. "Religion is necessary for the people."

No such considerations move the new society. Constant human progress and unadulterated science are its motto. If someone should still have religious requirements, let him satisfy them in the company of like-minded people. Society

¹ *Polytheism*—the worship of many gods, based on the spiritualisation of natural phenomena characteristic of primitive communal society. The development of social classes made for the emergence of monotheism, or the belief in one God.—*Ed.*

² How the ancients thought about this subject can be seen from Aristotle's statement on how a tyrant (the term applied to autocrats in Ancient Greece) should behave: "... He must be seen always to be exceptionally zealous as regards religious observances (for people are less afraid of suffering any illegal treatment from men of this sort, if they think that their ruler has religious scruples and pays regard to the gods, and also they plot against him less, thinking that he has even the gods as allies)." Aristotle. *Politics*.

does not concern itself with the matter. The priest, too, must work in order to live and since he learns in doing so, the day will come when he too realises that the *highest aim* in life is to be a man.

Ethics and morality exist also without religion; the opposite can be asserted only by the simple-minded or hypocrites. Ethics and morality are the expression for concepts which govern both relations between men and their actions. Religion embraces the relations of men with supernatural beings. As religion, so concepts of morality stem from the prevailing social conditions in which men live.¹ Cannibals regard man-eating as highly moral, the Greeks and Romans considered slavery moral, the feudal lord of the Middle Ages considered serfdom moral; and today to the modern capitalist wage-labour relations, the exploitation of women and the demoralisation of children by industrial labour all appear moral.² Four stages of society and four concepts of morality, and yet the highest moral sense prevails in none. The highest moral condition is when men stand to one another as *free and equal* beings, that in which the principle "As ye would that men should do to you, do ye also to them likewise" rules all human relations. In the Middle Ages it was man's genealogical tree that determined everything, now it is his property; in future man will be respected because he is man. And the future belongs to socialism.

¹ See K. Kautsky, *Ethik und materialistische Geschichtsauffassung*, Stuttgart, 1905, Verlag J. H. W. Dietz Nachf.

² When the bourgeois is at a loss for reasons to justify something unseemly, the odds are a thousand to one that he will appeal to "morality".

V

THE SOCIALIST EDUCATION SYSTEM

In the seventies, Dr. Lasker, the late Reichstag deputy, delivered an address in Berlin, in which he arrived at the conclusion that an equal level of education for all members of society was possible. Dr. Lasker, however, was an anti-socialist, a rigid upholder of private property and capitalism. Today the question of education is first and foremost a *question of money*. Under these circumstances an equal level of education for all is *impossible*. Individuals, living in relatively favourable circumstances, can, by overcoming many difficulties and exerting great energy, which not many possess, succeed in acquiring a higher education. The masses will never be able to do so as long as they live in a state of dependence and in conditions of social oppression.¹

In the new society the conditions of life are equal for all. Men's needs and inclinations differ and these differences, being rooted in man's very nature, will continue to exist, but every individual can develop in keeping with the conditions of life that are identical for all. Like so much else,

¹ "A certain degree of culture and well-being is an essential external condition for the development of the philosophical spirit. . . . We therefore find that people began to philosophise only in nations which had raised themselves to a considerable height of prosperity and culture." Tennemann, quoted by Buckle in a footnote, *History of Civilisation*, Vol. 1, New York, 1862, p. 8.

"Material and intellectual interests go hand in hand. One cannot exist without the other. They are fused as one body and spirit; to separate them is to kill them." Thünen, *Der isolierte Staat*.

"... The best life, whether separately for an individual or collectively for states, is the life conjoined with virtue furnished with sufficient means for taking part in virtuous actions." Aristotle, *Politics*.

the uniform equality imputed to socialism is nonsense. Even if socialism were to strive for it, it would be unreasonable, for it would conflict with the nature of man and would have to abandon the idea of seeing society develop according to its principles. Yes, even if socialism should succeed in taking society unaware and forcing on it such unnatural conditions, within a very short time these new conditions, felt to be shackles, would be broken and cast off and socialism would be doomed for ever. Society develops according to its immanent laws, and acts accordingly.¹

The proper education of the rising generation must be one of the principal tasks of the new society. Every newly born is a welcome addition to society, for society sees in him the prospect of its continuation and its own further development and, therefore, also feels the duty to defend the new human being to the best of its ability. Hence, the prime object of its care is she who gives birth, the mother. Comfortable housing, pleasant surroundings, all sorts of provisions necessary to this stage of motherhood, careful nursing for her and the child, are the first requirement. It is self-evident that mothers should breast-feed their babies for as long as is possible and necessary. Moleschott, Sonderegger, all hygienists and doctors agree that nothing can fully substitute mother's milk.

Those who, like Eugen Richter, are indignant at the idea of every young mother coming to a lying-in establishment, where she will have everything that today is accessible only for the very wealthiest—and even they cannot furnish what specially appointed institutions could—should be reminded that at present *at least four-fifths* of the human race are born in the *most primitive* conditions, which are a disgrace to our civilisation. And from among the remaining fifth of our mothers again only a minority can enjoy some of the care and comfort that should be enjoyed by a woman in that con-

¹ It is surprising that, considering the incomparable narrow-mindedness of the adversaries of socialism, nobody has as yet claimed that in socialist society everyone will receive equal portions of food and equally sized linen and clothes, so as to "crown" this fiction of uniform equality.

dition. *Indeed in cities with excellent provisions for maternity care, there are today a good number of women who, as soon as they feel their time approaching, go to such institutions and await their confinement there. But the fees at such institutions are very high and therefore only few women can afford them, while still others are held back by prejudice. Thus, here again we have an example of how in everything bourgeois society carries in its womb the seeds of the institutions of the future.*

Motherhood for most women of the upper classes acquires a unique flavour owing to the fact that they transfer their maternal duties at the soonest possible moment to a *proletarian wet-nurse*. It is well known that Wendish Lusatia (Spreewald) is the region from which the women of the Berlin bourgeoisie, who themselves are unwilling or unable to nurse their babies, draw their wet-nurses. The "raising of wet-nurses", which consists in the girls of the district allowing themselves to become pregnant in order to be able after the birth of their children to hire themselves out as professional wet-nurses to well-to-do Berlin families, is practised there on a *professional basis*. Girls who have given birth to three or four children out of wedlock in order to be able to hire themselves out as wet-nurses are no rarity there, and their eligibility as brides for the young men of the Spreewald depends on the size of their earnings in this business. From the viewpoint of bourgeois morality this is reprehensible behaviour, but from the viewpoint of the family interests of the bourgeoisie it is considered commendable and desirable.

As soon as the child grows up, it begins to play with other children of its age, under common supervision. All that can be done for his mental and physical development, given his particular intellect and requirements, is provided. Who has watched children knows that they *are best brought up in the company of their equals*, because sociability and the instinct to imitate are strongly developed in them. Small children are particularly inclined to take the example of older ones and follow them rather than their parents. These

qualities can be turned to advantage in education.¹ Playgrounds and kindergartens are followed by an introduction through play to the rudiments of knowledge and various manual occupations. Then comes moderate mental and physical work, combined with gymnastic exercises and free movement on the play- and sports ground, on the skating-rink and in the swimming pool; drill marches, wrestling and exercise for both sexes follow and supplement one another. The aim is to raise a healthy, hardy, physically and mentally well developed generation. Various practical activities, gardening, agriculture, industry, the technology of production are introduced step by step. Mental development in diverse fields of knowledge is not neglected.

The hygiene measures and improvements in the education system will be similar to those carried out in the sphere of production. A mass of obsolete and superfluous methods and subjects hampering mental and physical development will be dropped. The knowledge of natural phenomena, adapted to fit children's mental capacities, will do more to spur on the desire for knowledge than a system of education in which one subject is incompatible with another and undermines its influence, as is the case, for instance, when, on the one hand, religion is taught on the basis of the Bible, and, on the other, the natural sciences and natural history. The equipment of schoolrooms and educational establishments and the teaching aids will all be in keeping with the high cultural level of the new society. Study equipment and materials, clothing and maintenance will be provided by society, and no pupil is at a disadvantage with respect to another.² This is another is-

¹ This has been brilliantly elaborated by Fourier, even though he lapses into Utopianism in the elaboration of his ideas. Cf. A. Bebel, *Charles Fourier, sein Leben und seine Theorien*, 3. Auflage, Stuttgart, 1907.

² *Condorcet* demands in his plan of education: "Education must be free, equal, universal, physical, mental, industrial and political, and must aim at real and actual equality."

Likewise *Rousseau* in his *Political Economy*: "Above all, education must be public, equal and mixed, must raise men and citizens."

Aristotle also demands: "And inasmuch as the end for the whole

sue which arouses the indignation of our bourgeois "champions of law and order". Our opponents cry out that schools are to be turned into barracks and parents deprived of all influence over their children. All that is out of the question. Since parents in the future society will have infinitely more leisure than most have today—we need but recall the ten-hour and longer working day of most workers, of the post, railway, gaol wardens and police officers, and the demands made upon the time of the handicraftsmen, small farmers, tradesmen, the military, many doctors, etc.,—it follows that they will be able to devote themselves to their children to an extent impossible today. *Moreover, the parents themselves will have the regulation of the education system in their hands, for it is they who will determine the measures and arrangements that shall be adopted and introduced. We shall then live in a genuinely democratic society. The education committees, then functioning, will be made up of parents—of both sexes—and professional educationalists.* Does anyone imagine that they will act against their sentiments and interests? That happens in present-day society, where the state implements its interests in the educational field against the wish of most parents.

Our opponents make it appear that it is one of the greatest pleasures of parents to have their children about them all day long in order to educate them. In actual practice just the opposite is true. The difficulties and effort involved in the education of a child can best be judged by those parents who themselves are or have been in such a situation. To be sure, when there are several children in a family this facilitates education, but it also involves so much work and effort that the mother, who bears the main brunt of this task, is glad when the children reach school age and the house is rid of them for part of the day. Also, most parents are able to give their children only a very imperfect education.

state is one, it is manifest that education also must necessarily be one and the same for all and that the superintendence of this must be public, and not on private lines. . . ." Aristotle, *Politics*.

The vast majority do not have the necessary time; the fathers have their business to attend to, the mothers their housework, if they do not have to go out to earn themselves. But even if they have the time for education, in innumerable cases they lack the *ability*. How many parents are able to follow their children's course of instruction at school and to give them a helping hand? Very few. The mother, who in most such cases has more time, seldom has the ability, having herself received insufficient training for it. All teaching methods and syllabuses change so frequently that parents find them unfamiliar.

Also, the home conditions for the vast majority of children are so poor that they have neither the comfort and order nor the quiet necessary for them to do their homework, nor do they find the necessary encouragement. Often even the minimum essentials are lacking. The home is too small and overcrowded, everybody is moving about in this confined space, the furniture is insufficient and ill-adapted to the needs of the child who wants to work. Not infrequently light, air and heat are inadequate; the materials for study and work, if there are any available at all, are of the worst quality; frequently hunger is gnawing at the stomach of the child as well, making it impossible for him to concentrate on or take any pleasure in his work. Besides, many hundreds of thousands of children are sent out to work in domestic service or industry, which mars their youth and prevents them from coping with their very limited schoolwork. Also, children often have to overcome the opposition of narrow-minded parents when they try to spend time on their schoolwork or play. In short, the obstacles are so numerous that it is surprising young people are as well educated as they are. This is proof of the healthy essence of human nature and of its inherent striving for progress and perfection.

Bourgeois society admits some of these evils and endeavours to facilitate the education of the young by introducing free education and sometimes supplying the necessary books and equipment free of charge, two things, which as late as the mid-eighties the then Minister of Education of Saxony,

opposing the socialist Landtag deputies, described as "*Social-Democratic demands*". In France, where after long neglect popular education has made all the more progress, things have been taken, at least in Paris, one step further, for *school-children are receiving meals paid for out of public funds*. The poor receive their meals free of charge and the children of more well-to-do parents have to pay a minimal fee to the municipal treasury. That is already a communistic arrangement that has proved satisfactory for parents and children alike.

Further proof of the inadequacy of the present school system, which is often unable to fulfil the moderate tasks it sets itself, is the fact that thousands of children *are unable to fulfil their school duties owing to insufficient food*. No winter passes without thousands of children in our towns going to school without any breakfast. The nourishment of hundreds of thousands of others is *insufficient*. For all these children meals and clothing at public expense would be a great boon; they will not regard as a workhouse a community which teaches them by providing them with proper food and clothing what it means to be a human being. Bourgeois society cannot deny the existence of this misery, and compassionate souls, therefore, get together to found breakfast and soup kitchens in order *by means of charity* to do at least in some measure what society should do as its duty. Of late a number of municipalities have taken measures to provide poor children with the essential minimum of food out of public funds. All this is insufficient and what should be theirs by right is granted as charity.¹

So-called homework is being reduced in our schools to a minimum, and rightly so, since the inadequacy of the work done at home has been acknowledged. Pupils from well-to-do

¹ "At present there are school canteens in 20 districts of Paris, which provide luncheons—meat and vegetables. Only this meal has to be laid on, but several districts also provide breakfast and dinner." Helene Simon, *Schule und Brot*, Hamburg, 1907, S. 44. Thanks to an initiative of the Labour Party in 1906 a commission was set up in England to examine a proposal for the provision of free meals in schools.

families have an advantage over poorer ones not only by virtue of their conditions but also because they frequently have governesses and private teachers to assist them in their studies. On the other hand, however, laziness and slovenliness are more likely to be found in rich pupils, because the riches of their parents make studies seem superfluous to them, and they are often confronted with the most immoral examples and are exposed to strong temptation. He who every day and every hour hears and sees that rank, position and wealth mean everything, acquires abnormal conceptions of man and his duties and of state and social institutions.

Strictly speaking, bourgeois society has no cause to be indignant at the communist education of children, which the socialists aim at, for it has itself partly introduced it for the privileged classes, *only in a distorted manner*. Look at the *cadet corps*, *army orphanages*, *boarding-schools*, *seminaries*, *theological colleges*, and so on. Many thousands of children, some of them from the upper classes, are educated in these institutions in a *one-sided* and *wrong* manner and *in monastic seclusion*, and are trained for certain specific occupations. Many members of the more well-to-do classes—doctors, clergymen, civil servants, factory owners, landowners, rich peasants, etc.—who live in the country or in small towns where there are no higher educational establishments—send their children to the larger cities to boarding-schools and barely get a glimpse of them, except possibly during holidays.

There is accordingly a contradiction between the indignation of our opponents about a communistic education for children and about “the estrangement of children from their parents”, on the one hand, and the fact that they have introduced similar education *for their own children*, only in a *bungled, false and inadequate manner*, on the other. A whole chapter of its own could be written about the education of the children of the well-to-do classes by wet-nurses, nursery maids, governesses, private tutors, one that would throw a strange light on their family life. It would emerge that *here, too, hypocrisy often reigns and that conditions for teachers and pupils alike are anything but ideal*.

In order to meet the demands of the totally transformed system of education, aiming to promote both the physical and the mental development and training of the younger generation, the number of teachers will have to increase. In the education of society's rising generation, the same concern must be shown that is given in the army to the training of soldiers, where a non-commissioned officer is appointed for every eight to ten men. In future, when there is a teacher to instruct a similar number of pupils, the necessary objective will be achieved. Also, the introduction to mechanical work in well-equipped training workshops, to gardening and agricultural work, will constitute a good part of young people's education. This will all be organised so that pupils' courses are varied and do not overtax them, in order to educate as harmoniously developed people as possible.

Education must also be *equal for both sexes and mixed*. Their separation is justifiable only in cases where the difference of sex makes such separation absolutely necessary. In this type of education the United States is far ahead of us. There, education is mixed from the primary schools right through to the university. Not only *instruction is free but also educational aids, including articles required for needle work and domestic science, and also for chemistry, and physics, and those needed for experiments and at the workbench*. Most schools have gymnasiums, baths, swimming pools and playgrounds attached. In secondary schools girls are taught gymnastics, swimming, rowing and marching.¹

The socialist system of education will achieve even more. Properly regulated and organised and placed under adequate control, it will continue to the age when society determines that its youth has attained majority. From then on both sexes will be fully qualified to exercise all rights and fulfil all duties in any field. Then society will be certain that it had reared only able, harmoniously developed members, people

¹ Professor Dr. Emil Hausknecht. *Amerikanisches Bildungswesen*. Wissenschaftliche Beilage zum Jahresbericht der zweiten Städtischen Realschule zu Berlin, Ostern, 1894, Gärtners Verlag.

to whom nothing human is alien, who are as familiar with their own nature and their own condition as they are with the nature and condition of the society they join as members enjoying full rights.

The daily increasing depravity of our modern youth, which is the natural consequence of the present rot and decay of society—the unruliness, lack of discipline, immorality, and coarse pleasure-seeking, such as are especially pronounced among young people in our higher educational establishments, gymnasias, polytechnical schools, universities, etc., vices that are caused and aggravated by the looseness and unrest of home life and the poisonous influences of social life—will vanish. The adverse influence of the factory system, of inadequate housing, that dissoluteness and self-assurance of the young at an age in which man most needs reins and education for self-discipline and self-control, will also come to an end. Future society will avoid all these ills without having to resort to force. The social institutions and the moral atmosphere that will spring from these and dominate society will make them impossible. As in Nature disease and the destruction of organisms can appear only when decay sets in, so likewise in society.

No one will deny that there are serious defects in our present system of education and instruction, and that the secondary schools and higher educational establishments suffer more from them than the primary ones. A village school is an example of moral health as compared with a gymnasium and a handicrafts school for girls from poor families a model of morality as compared with a large number of exclusive boarding-schools. The reason is not difficult to find. In the upper classes of society all striving for higher aims has been stifled, *they have no ideals any more. Owing to the lack of ideals and of higher purposeful endeavour, pleasure-seeking and the taste for indulgence with its physical and moral abuses have spread.* How can young people growing up in this atmosphere be anything other than what they are? Material indulgence which knows no moderation and no bounds is what they see and grow accustomed to. Why strive for

anything when the wealth of their parents makes such striving seem superfluous? The *summit* of education for a large majority of the sons of our bourgeoisie consists in passing the examination needed to obtain a certificate qualifying for one year's service as a volunteer in the German army. Once this has been achieved, they believe they have climbed Pelion and Ossa, and regard themselves as demi-gods. If they have a reserve officer's certificate in their pocket their pride and arrogance know no bounds. The influence exercised by this generation—most of whose members are weak in character and possess but scant knowledge, while they are strong in loyalty and ambition—leads to the present period being characterised as "the age of the reserve officer". The reserve officer's distinctive feature is that he has no character and little knowledge, but plenty of loyalty; he is servile towards his superiors and arrogant and brutal towards his inferiors.

Many daughters of the upper classes are trained as show-pieces, fools of fashion and salon *habituées*, who chase one enjoyment after another and, finally satiated, suffer from boredom and all sorts of imaginary and real illnesses. When they grow old, they become bigots, spiritualists and faith healers who turn up their eyes at the corruption of the world and preach asceticism.

Attempts are being made to lower the educational level of the lower classes. The proletariat may become too clever, too knowing, might refuse to tolerate any more its state of servitude and rebel against its earthly gods. The stupider the masses, the more easily they put up with control and rule. "The stupidest worker is our favourite worker," the big land-owners from the estates East of the Elbe reiterated at their meetings. This single sentence implies a whole programme.

Thus, modern society when confronted with the question of instruction and education is just as aimless and bewildered as in relation to all other social problems. What does it do? It calls for the rod and preaches religion, that is, submissiveness and acquiescence to those who are much too submissive and acquiescent as it is; it teaches abstinence where due to poverty abstinence in the bare essentials of life

has become a necessity. Those who because of the coarseness of their nature revolt, are taken to so-called reformatories, where a pious atmosphere reforms. This is the sum of our society's wisdom in matters of education. The whole depravity of the educational methods applied to the children of proletarian families living in reduced circumstances can be seen from the numerous cases of ill-treatment perpetrated by the staff in charge of so-called educational homes, which lead to criminal proceedings being instituted against them. These revealed how fanatical bigots acknowledged themselves guilty of hair-raising abuses with sadistic joy. And how many such horrors are never made public!

VI

ART AND LITERATURE IN SOCIALIST SOCIETY

As soon as the rising generation of the new society attains its majority all further development is left to the individual. Each does as his inclinations and talents prompt him. Some choose a branch of the ever more impressively advancing natural sciences: anthropology, zoology, botany, mineralogy, geology, physics, chemistry, archaeology, etc., others take up the science of history, philology, the arts, etc. Still others, moved by passion, become musicians, painters, sculptors or actors. In future there will be no artists, scientists or craftsmen by profession. Thousands of brilliant talents, hitherto stifled, will now be able to unfold and manifest themselves in knowledge and skills. There will be no longer musicians, actors, artists, scientists by profession, but the more *by inspiration, talent and genius*. These achievements will excel those of the present day to the same vast extent as the industrial, technical and agricultural achievements of the future society will excel those of today.

An era of art and sciences will be ushered in, such as the world has never seen before, and its creations will be of a corresponding quality.

The renaissance art will experience, once conditions worthy of human beings exist, was foreseen by no less a man than the late *Richard Wagner*, who spoke of it as early as 1850 in his *Art and Revolution*. This work is particularly remarkable, because it appeared immediately after a revolution that had been crushed and one in which *Wagner* took part. *Wagner* predicts what the future will bring. In this book he turns directly to the working class upon whom he calls to help the artists found genuine art. Among other things, he

says: "When, with the *free men of the future*, the earning of a living is *no longer the purpose of life*; when, on the contrary, thanks to the new faith now practised, or *better knowledge*, the earning of a livelihood in exchange for a *compatible natural activity is ensured him beyond all doubt*, in short, when industry is no longer our master but our servant, *we shall make the joy of life the purpose of life and seek to educate our children able and fit really to experience that joy to the full. Education, based on the building up of strength and the fostering of physical beauty, will, if only due to the untroubled love for the child and the joy experienced at his thriving beauty, become a purely artistic one, and everybody will in some respect become a true artist. The diversity of natural inclinations will develop the most manifold trends to an unexpected richness!*" That is a thoroughly socialistic idea and fully in keeping with our statements.

Social life will become increasingly public in the future. This trend can be seen at its clearest from the completely different position of woman, as compared with former times. Domestic life will be confined to the essential minimum, while the widest possible field will be opened to the gratification of the social instinct. Large meeting-places for lectures and debates and for the discussion of all public affairs, in which the ruling decision will in future belong to the collective, eating halls, recreation and reading rooms, libraries, concert halls, theatres, museums, play and sports grounds, parks and promenades, public baths, educational establishments of all sorts, all fitted out with the latest equipment, shall afford rich opportunities for superlative achievement in the arts, sciences and all spheres of entertainment. Likewise will the institutions for the care of the sick, the infirm and the aged conform to the highest possible standards.

How paltry will our much vaunted age appear in comparison. This fawning for favour and benevolence from above, this dog-like cringing, this jealous struggle for positions of privilege, in which the most hateful methods are employed,

along with stifling of convictions, the veiling of good qualities that might give offence, emasculation of character, simulation of views and feelings—all those qualities which *can be summed up as cowardice and unprincipledness*, now come every day more and more distinctly to the fore. Whatever elevates and ennobles man—self-reliance, independence and incorruptibility in his views and convictions, his freedom to assert his personality—is considered in the conditions prevailing today mainly as a fault or defect. These properties often ruin him who possesses them, if he cannot suppress them. Many are not even aware of their degradation, they have grown used to it. The dog regards it as a matter of course that he has a master who, when out of temper, gives him a taste of the whip.

With the above-mentioned changes in social life all literary production will undergo a radical change. Theological literature, which accounts for the largest number of titles in the annual catalogues of new publications, drops out together with legal literature. There is no interest shown in the first and no use for the second; publications concerned with the daily battles over political institutions will also disappear, because these institutions will no longer exist. The relevant studies will become part of cultural history. The vast mass of inane publications—evidence of corrupted taste, often possible only through sacrifices made by the author out of vanity—are gone. Even speaking from the viewpoint of present conditions, it can be said without exaggeration that there is such a vast mass of superficial or harmful books and of obvious trash in the field of literary production that four-fifths of all writings could disappear from the market *without loss to a single sphere of culture*.

Belles-lettres and the press will be hit to the same extent. There is nothing more lacking in intellect and more superficial than most of our newspapers. If our level of cultural achievement and scientific outlook were to be judged from the content of our newspapers, it would be low indeed. The activity of men and the general state of affairs are judged from a viewpoint that is reminiscent of the distant past and

that has long since been proved untenable by the science of today. A large portion of our journalists are people who, as Bismarck once said, not without reason, "missed their calling", but whose level of education and salary claims fall in with the business interests of the bourgeoisie. Furthermore, these newspapers, as well as the majority of the literary journals, have the mission of circulating most obscene advertisements in their advertisement sections, while their business sections pursue identical aims in a different field. The material interest of the owner determines the content. Literature is *generally* not much better than the newspapers, for it cultivates interest in sexual excesses, renders homage now to shallow pseudo-enlightenment, now to the most absurd prejudices and superstitions. The aim is to make the bourgeois world—all its shortcomings, which are conceded as trifles, notwithstanding—appear as the best of all possible worlds.

In this extensive and important field the future society will have to thoroughly put its house in order. Science, truth, beauty and debate over what is best, will rule supreme. Everyone who makes a worthwhile contribution will have ample opportunity for participation. He no longer depends upon the favour of a publisher, money considerations or prejudice, but on the judgement of impartial experts, in whose selection he himself takes part, and against whose unfavourable decision he can always appeal to the community, a step that is impossible in newspaper offices or publishing houses today which are guided by their private interests alone. The naïve notion that all debate will be suppressed in a socialist community can be defended only by those who see in the bourgeois world an ideal social system, and who, because of their hostility to socialism, seek to slander and belittle it. A society that is based on complete democratic equality neither knows nor tolerates oppression. *Only unlimited freedom of thought makes uninterrupted progress possible, and this is the vital principle of society.* It is also a gross delusion to represent bourgeois society as a champion of genuine freedom of thought. Parties representing the class

interests of the ruling publish in the press only what does not assail their class interests, and woe to anyone who should attempt to kick against this. His social ruin is sealed, as everybody who is familiar with the situation knows only too well. Many a writer could tell a tale of woe on how publishers handle literary work which does not suit them. Finally, our press and criminal legislation betray the spirit that animates our ruling and governing classes. True freedom of thought is looked upon by them as the most dangerous of evils.

VII

FREE DEVELOPMENT OF THE INDIVIDUAL

1. AN EXISTENCE FREE OF CARES

Man is to have the opportunity to develop himself to the full—that should be the purpose of all human socialisation, which means that he must not be fettered to the soil on which he has been placed by accident of birth. We should acquaint ourselves with our fellows elsewhere and the world at large not only from books and newspapers; personal observation and practical experience are also needed. Hence, the future society must make accessible to all what in present society is already available to many, even if in most cases they are driven to it by need. *The requirement for variety in all aspects of life is a striving deeply rooted in human nature.* It stems from the craving for self-perfection that is inherent in every human being. A plant in a dark room stretches and strains, as though endowed with consciousness, towards the light that filters through some crevice. Just so with man. An instinct implanted in man must find rational satisfaction. The craving for change is not hampered by the condition of the new society; on the contrary, that society does everything to gratify this craving. This will be facilitated by the highly developed system of communications and made necessary by international relations. In future many more people will travel for all manner of purposes than was the case before.

Society requires ample stocks of the necessities of life of all kind in order to be able to meet all demands. It correspondingly regulates working hours according to requirements, makes them longer or shorter, as requirements and the time of year make it desirable. It will apply itself in one season mainly to agriculture, in another mainly to industrial production and to arts and crafts, it deploys its labour force

as occasion may require: through the combination of numerous forces provided with the most up-to-date technical equipment it can with the greatest of ease carry out undertakings which seem impossible today.

Society not only takes over the care of the young, but does the same for its aged, sick and incapacitated. The community takes care of those who for any reason have become unable to work. This is not a question of charity, but one of *duty*, not a hand-out but care and assistance born of every possible consideration due to those, who, while strong and able to work, fulfilled their duties to the community. Old age is made more pleasant with everything society has to offer. Everyone holds onto the hope that he will some day himself enjoy what he now affords to others. Now the old are not haunted by the thought that others are waiting for them to die in order to come into an inheritance. The fear that once they are old and helpless they will be thrown aside like a squeezed-out lemon has also vanished. They depend neither on the charity and support of their children nor on the alms of the community.¹ The position of most parents who in their old age depend on the support of their children is all too familiar. And how demoralising an influence is exerted on children, and to a still greater degree on relatives, by the hope of a possible *inheritance*. What base passions are awakened, and how many are the crimes that such hopes have given rise to—murder, forgery, usurpation of inheritance, perjury and blackmail.

¹ "The person who has led an honourable and active life until old age should in his old age depend neither on the charity of his children nor that of bourgeois society. An independent, carefree and untroubled old age is the natural reward for unceasing effort when he was strong and healthy." Thünen, *Der isolierte Staat*. But what is the state of affairs in bourgeois society? Millions look with dread upon the day when, once they have grown old, they will be thrown into the street. And our industrial system makes man grow old prematurely. The much vaunted old-age and invalid pensions in the German Empire are but a scanty substitute—this even their most ardent defenders admit. They are even less adequate than the pensions the municipalities grant to the large majority of retired civil servants.

The moral and physical condition of society, the nature of the work, homes, food, clothing and social life it provides will all help to protect men against accidents, sickness and debility. Natural death, the ebbing away of vital strength will then become more and more common. The conviction that heaven is on earth and that death is the end will cause people to lead sensible lives. He enjoys most who enjoys longest. Long life is valued most by the clergy who prepare people for the "hereafter". A life free from cares makes it possible for the clergy to enjoy the highest life expectancy of any profession.

2. REVOLUTION IN FOOD

To live man needs first and foremost food and drink. Friends of the so-called "natural way of life" often ask why Social-Democrats are indifferent to vegetarianism. Well, everybody lives as he pleases. Vegetarianism, a doctrine that prescribes an exclusively vegetable diet, spread first in circles who were in the pleasant position of being able to choose between a vegetable and a meat diet. The large majority of humanity does not have this choice, it has to live in accordance with its means, the meagerness of which keeps it mainly on a vegetable diet, often on one containing very little nourishment at that. For our working-class population in Silesia, Saxony, Thuringia, etc., the potato is the main source of nourishment, even bread occupies only second place; meat, and then only of the poorest quality, is hardly ever seen on the table. The vast majority of the rural population, even though it breeds livestock, rarely eats meat for it has to sell the animals in order to satisfy its other wants with the proceeds received from sales.

For the innumerable people who are compelled to live as vegetarians an occasional solid beefsteak or a good leg of mutton would definitely enhance their diet.¹ When vege-

¹ That this is really so has been confirmed by nutrition experiments reported recently by two Italian scientists investigating the metabolism

tarians object to the *overrating* of the nutritive value of meat they are right, but they are wrong when, mainly for sentimental reasons, they oppose its use as pernicious and fatal, for example, because it is against man's nature to kill animals and partake of a "corpse". The wish to live comfortably and undisturbed compels us to declare war upon and exterminate a large number of living beings in the shape of all manner of vermin, and so as not to be eaten up ourselves we have to kill and destroy wild animals. Letting the "faithful friends of man"—domestic animals—live unhindered would multiply the number of these "faithful friends" in several decades to such an extent that they would "devour" us by robbing us of food. The claim that vegetable food fosters mildness of temperament is also erroneous. The "beast" was awakened in the mild, vegetarian Hindu when the cruelty of the English drove him to mutiny.

The nutritive value of a food must not be judged by its protein content alone. The proportion of the protein consumed with the relevant foodstuff that remains undigested must also be taken into account. From this viewpoint meat, rice and potatoes are in the proportion of 2.5, 20 and 22, that is, of 100 grammes of albumen contained in meat, 2.5 reappear in excrement, of 100 grammes contained in rice

of a population that has for generations been living on an exclusively vegetable diet. A rural population of this type living in the most wretched economic circumstances can be found in the south of Italy, in Abruzzi. Its diet consists of maize flour, vegetables and olive oil. They do not partake of milk, cheese or eggs. Meat is seen on the table only three or four times a year. For experimental purposes meat was added to their diet, namely, every person received 100 grammes of meat for 15 days and 200 grammes for a further 15 days. It emerged "that the assimilation processes, that is, the assimilation of food in the intestinal canal, proceeded much more satisfactorily. The very large amount of nutritious matter that left the body without being used was reduced to a minimum. Not only the added animal protein was fully assimilated but also the attending vegetable diet was used up to a much higher degree than before. This is all the more remarkable since it was hard to digest because it consisted almost exclusively of maize, which contains a large amount of cellulose." Dr. Med. A. Lipschütz, "Eine Reform unserer Ernährung?" *Neue Zeit*, 27. Jahrgang, 1. Band, S. 915.

and potatoes, 20 and 22 grammes respectively. The celebrated Russian physiologist Pavlov and his school have shown that many more enzymes are secreted to digest bread than are to digest meat. Pavlov further proved that the digestive juices secreted by the stomach consist quantitatively of two amounts: the gastric juice is secreted partly through the stimulation of the stomach's mucous membrane by the given food and partly as "appetite" juice through the stimulation of the sense organs by the food. The amount of "appetite" juice depends on our psychic condition, such as hunger, worry, anger, joy, etc., and on the nature of the relevant food.

However, the importance of "appetite" juice for the digestion varies for different foods. Some foods, for example, bread, boiled egg-white or pure starch, cannot, as has been proved through experiments, be digested at all if their digestion is not initiated by the secretion of "appetite" juice: they can be digested only if the appetite is stimulated, or if they are taken together with other food. On the other hand, meat, as Pavlov has demonstrated, can be digested in part even without "appetite" juice, although that juice does accelerate digestion greatly (five times). *"We must, therefore, take into account circumstances connected with man's psyche. Here is the bridge between the findings of nutrition physiology and social conditions. The modern town-dweller, notably the mass of the working class, lives in social conditions that are bound to kill all normal appetite. Work in badly ventilated factories, constant worry about where the next meal is to come from, the insufficiency of mental relaxation and cheerfulness, total bodily exhaustion,—all these are factors undermining appetite.* In this state of mind we are unable to secrete the 'appetite' juice, necessary for the assimilation of vegetable food. On the other hand, in meat we have a food which, in a manner of speaking, takes care of its digestion itself, and a good part of it is digested even without appetite stimulation and, moreover, being a stimulant and at the same time a luxury, it whets the appetite enormously. Thus, meat also promotes the digestion of vegetables eaten at the same

meal, and secures more effective assimilation of the substances taken in with the latter. This we regard as a great advantage of animal food for modern man."¹

Sonderegger hits the nail on the head when he says: "There is no order of rank as regards the need for different kinds of food, but there is an immutable law with regard to the combination of their nutritive substances." It is also true that no one can nourish himself on a diet of meat alone, but can do so on an exclusively vegetable diet, provided he can select it properly. On the other hand, no one will be satisfied with a definite vegetable diet, be it even the most nourishing. Beans, peas, lentils, in short, pulses are the most nutritious of all food, but to live exclusively on them—which is meant to be possible—would be torture. Karl Marx mentions in *Capital* that the Chilean mine-owners compel their workers to eat beans year in year out because they impart to them great strength and enable them to carry burdens that they would not be able to carry if they kept to any other diet. However, despite their nutritive value the workers reject the beans, but they are nevertheless forced to put up with them. In any case, the happiness and well-being of people does not depend on a particular type of diet, as is claimed by the fanatics among the vegetarians. Climate, social conditions, customs and individual taste are decisive.²

¹ A. Lipschütz, op. cit., S. 914 bis 915.

² "The staple diet consists almost exclusively of vegetables with a very small addition of animal foods. Meat holds a very modest place in the peasant's diet. No one will be able to deny today that it is possible to live that way. Even a diet consisting exclusively of vegetables which, if rationally chosen, offers the palate wide variety, is quite compatible with well-being. However, another requirement asserts itself unequivocally on all continents—the original simple diet of the people is being forsaken, and an increase in tasty species and foods is demanded. This also applies to meat which can be used for preparing many hundreds of dishes. This urge to have a varied diet can be seen everywhere, and as simple customs, habits and national costumes disappear, so also do old eating habits. This revolution is proceeding in all countries; in Japan, too, where a peculiar national diet formerly prevailed, European food is ousting old practices, and the Japanese Navy has even introduced

As civilisation advances, a vegetable diet increasingly takes the place of the exclusive meat diet, such as that to be found among hunting and pastoral peoples. A varied agriculture is a sign of more advanced civilisation. Much more vegetable nutritive matter can be obtained from a field of a given size than meat from the same area by cattle-raising. This factor leads to vegetable food assuming ever greater preponderance. The meat deliveries we are receiving as a result of the vandalic methods practised in remote countries, especially South America and Australia, will be exhausted in a few decades. On the other hand, animals are raised not only for the sake of their meat, but also for the sake of wool, hair, bristles, skins, milk, eggs, etc., and many industries and many human wants depend on these products. Also, a large amount of industrial waste products and domestic scraps can hardly anywhere be turned to better advantage than in cattle-raising. In future, the seas will also have to yield to man their wealth of animal food in a much higher measure than they do today. In future, it will rarely happen, as it does today, that in the event of rich catches whole loads of fish are turned into manure because the available transportation or canning facilities are inadequate for their preservation or because high transportation costs prohibit their sale. And it is very probable that with the abolition of the antithesis between town and country, when the population moves from the big towns to the country and work in closed factory premises is linked with agricultural work, once again a meat diet will give way to a predominantly vegetable diet. Admittedly, the lack of stimulants in the vegetable diet can be compensated for by proper, sensible cooking and the addition of seasoning. But a purely vegetable diet is neither likely nor necessary in the future.

the new fare, because it is more concentrated and proved to be more suitable for the men serving in the Navy. Everywhere efforts are being made to obtain this concentrated, rich and tasty food." M. Rubner, *Volksernährungsfragen*, S. 31 bis 32, Leipzig, 1908.

3. COMMUNIST KITCHEN

As regards food, *quality* rather than quantity is the vital consideration: plenty is of little use if that plenty is no good. Quality is greatly improved by the way food is cooked. *The preparation of food must be conducted as scientifically as all other human activity* if it is to afford the best results. *This requires knowledge and equipment.* That our women, to whose lot the preparation of food falls in the main, *do not* and cannot possibly possess that knowledge needs no proof.

Mechanised appliances in big catering establishments have even today reached a level of perfection which the best equipped domestic kitchen cannot equal. A kitchen equipped with electricity for heating and light is ideal. No smoke, no excessive heat, no vapours, the kitchen looks more like a parlour than a work-room, in which all sorts of technical equipment and machines take in their stride the most unpleasant and time-consuming work. It has electrically driven machines for peeling potatoes and fruit, for stoning fruit, for stuffing sausages, for pressing lard, cutting meat, frying and roasting it, grinders for coffee and spices, bread-slicers, ice-crushers, corkscrews and corks, and a hundred other apparatuses and machines enabling a relatively small number of people to prepare food for hundreds of diners without undue effort. The same applies to dish-washing and cleaning appliances.

For millions of women the kitchen is one of the most exhausting, time-robbing and wasteful institutions; it ruins their health and depresses them and is a source of constant worry for those—and they form the majority—whose means are scanty. The abolition of the private kitchen will be a deliverance for countless women. The kitchen is as obsolete an institution as the artisan's workshop; today both imply mismanagement, a waste of time, effort, heating and lighting, foodstuffs, etc.

The nutritive value of food is enhanced by the ease with which it can be assimilated; this is the decisive factor.¹ A

¹ "The decisive factor is the facility of assimilation by the individual." Niemeyer, *Gesundheitslehre*.

natural system of nourishment for all is possible only in the future society. Cato (200 B. C.) praises Ancient Rome for having had experts in the art of healing, but, up until the 6th century of the city, no work for them to do. The Romans lived so soberly and simply that disease was rare and old age was the usual cause of death. Only when gluttony and idleness, in short, licence for some and want and excessive work for others, asserted themselves, did matters change radically. Gluttony and licence will be impossible in future, and likewise want, misery and privation. There is enough to satisfy all. Heinrich Heine wrote:

There's enough of barley and wheat below
Every appetite to appease,
Myrtles and roses, beauty and joy,
And, finest of all, sweet peas.
O yes, when their pods split up, sweet peas
Will be piled on the ground sky-high.
As for heaven, let sparrows and hawks share it
With the angels that live in the sky.¹

"He who eats little lives well" (that is, long), said the Italian Cornaro in the 16th century, as quoted by Niemeyer. Ultimately chemistry will also participate in the manufacture of new and better foods in a manner and on a scale hitherto unknown. Today this branch of science is greatly abused in order to facilitate adulteration and fraud, but it is obvious that a chemically prepared food, possessing all the properties of a natural product, fulfils the same purpose. The form of preparation is of secondary importance, provided the product meets the requirements in all other respects.

4. REVOLUTION IN DOMESTIC LIFE

As in the kitchen, so in all spheres of domestic life a revolution will be accomplished: it will make redundant countless jobs that have to be carried out today. As in the future the home kitchen will be made entirely superfluous by

¹ Heinrich Heine, *Deutschland, ein Wintermärchen*.

the setting up of food-preparation centres, so central heating and central lighting will abolish all the former work connected with the maintenance of stoves, lamps and other lighting fixtures; warm and cold water supplies will place washing and bathing within the reach of all and without help from anybody else. Central laundries complete with drying machines will take over washing and drying; central dry-cleaning establishments will see to the cleaning of clothes and carpets. In Chicago, carpet-cleaning machines were exhibited that did the work in so short a time as to evoke the admiration of the ladies visiting the exhibition. An electric door opens at a slight pressure of the finger and closes automatically. Electric installations transport letters and newspapers to flats on all floors; electric lifts save us the trouble of climbing stairs. The interior decoration of houses—floors, wall-covering, furnishings—will all be arranged with an eye to easy cleaning and there will no longer be dust and germ traps. Refuse of all sorts will be carried out of the house by pipes, as waste water is today (refuse chutes). In the United States and in some European towns, as for example Zurich, Berlin and its suburbs, London, Vienna and Munich such houses already exist; they are exquisitely equipped and the numerous affluent families who live in them—others could not afford to—enjoy many of the conveniences described above.¹

¹ Of the 2,521 flats built in Wilmersdorf in 1908:

1,001	or	39.71	per	cent	had	central heating
1,373	"	54.46	"	"	"	hot water
1,288	"	51.09	"	"	"	electric light
2,063	"	81.83	"	"	"	a bathroom
699	"	27.73	"	"	"	a lift
304	"	12.06	"	"	"	vacuum cleaners

There was gas in all the flats.

In and around Berlin there are already many big houses with a single kitchen in which food is prepared for all tenants. Thus, bourgeois society carries in all fields the seeds for the socialist transformation of society. "The garden-town of the future will, along with the town centre accommodating the gas and electricity works and heating plant, the schools

Here once again we have an illustration of how capitalist society breaks the ground for a revolution in domestic life, but only for its elect. Once domestic life has been fundamentally transformed in this way, the servant, "this slave to all the whims of the mistress" disappears, as does the mistress. "Without servants no culture", Herr von Treitschke exclaimed with comical pathos. He cannot imagine society without servants, as Aristotle could not imagine it without *slaves*. It is surprising that Herr von Treitschke regards our servants as the "bearers of our culture". Treitschke, like Eugen Richter, is worried about boot-polishing and clothes-brushing, which he cannot see everyone doing for himself. In nine cases out of ten, people now see to that themselves, or a wife does it for her husband, or a daughter or son for a whole family. It could be said that what nine people out of every ten have done up to now, the remaining tenth can also do. But there is a better way out. Why in future should not the *young people*, irrespective of sex, be enlisted for this and other necessary work of a similar type? There is nothing shameful about work, even if it consists in polishing boots. This has even been discovered by certain officers of the old nobility, who to escape their debts ran off to the United States, where they became servants or bootblacks. In one of his pamphlets Herr Eugen Richter even goes so far as to bring about the downfall of the "Socialist Imperial Chancellor" and the collapse of the "socialist state of the future" over the boot-cleaning problem. The "Socialist Imperial Chancellor" refuses to polish his own boots and therein lie his troubles. Our opponents have relished this description and thereby

and assembly halls, also have a central kitchen for the whole community. It is feasible that the passages accommodating the electric and heating mains will be widened to form square shafts, in which food upon receipt of a telephone call will be transported in small automatic trucks to homes, in a way similar to that in which it is planned to establish electric underground mail boxes between post offices in big cities. The solution of this problem is much easier to achieve than that of the flight problem, which till recently seemed no more than a utopia." E. Lilienthal, *Reform der Hausarbeit. Dokumente des Fortschritts*, Heft 9, 1909.

merely demonstrated the modesty of their demands with regard to criticism of socialism. Herr Eugen Richter lived to experience the sorrow of not only seeing one of his own party members in Nuremberg invent a *shoe-cleaning machine* soon after the publication of his pamphlet, but also of learning that *electric shoe-cleaning machines* that carry out the task to perfection were exhibited at the Chicago World Exhibition. Thus, the principal objection raised by Richter and Treitschke against socialist society has been virtually thrown overboard by an invention made even in bourgeois society.

The revolutionary transformation that fundamentally changes all aspects of human life and especially the position of women is proceeding before our very eyes. It is only a question of *time*, when society will take up this transformation on a large scale, when the process will be accelerated and extended to all domains, *so that all without exception are able to enjoy its innumerable and manifold advantages.*

VIII

WOMAN IN THE FUTURE

This is going to be a very short chapter. It contains only the conclusions that follow from what has been said, conclusions the reader may easily draw for himself.

The woman of the future society is socially and economically independent, she is no longer subjected to even a vestige of domination or exploitation, she is free and on a par with man and mistress of her destiny. Her education is the same as that enjoyed by men, with the exception of some modifications demanded by differences of sex and sexual functions. Living in natural conditions, she is able to develop and exercise her physical and mental powers and faculties according to her requirements. She chooses her occupation in such a field as corresponds with her wishes, inclinations and talents, and enjoys working conditions identical to those of men. Even if she is engaged in some trade for some hours she may spend another part of the day working as an educator, teacher or nurse, and devote a third part of the day to some art, or the study of some branch of science, and set aside yet another part of the day to some administrative function. She joins in studies and work, enjoys diversions and entertainment with other women or with men as she pleases and as occasion allows.

In choosing the object of her love, woman, like man, is free and unhampered. She woos or is wooed, and enters into a union from no considerations other than her own inclinations. This bond is a private agreement, arrived at without the intermediacy of a functionary—just as marriage was a private agreement till far into the Middle Ages. Socialism is creating nothing new here, it only restores at a higher stage

of civilisation and under new social forms *what had prevailed universally before private property began to dominate society.*

Under the proviso that the satisfaction of his instincts inflicts no injury and disadvantage on others, the individual shall see to his own needs. *The gratification of the sexual instinct is as much a private concern as the satisfaction of any other natural instinct.* No one is accountable for it to others and no unsolicited judge has the right to interfere. What I shall eat, how I shall drink, sleep and dress, is my own affair, as is also my intercourse with a person of the opposite sex. Intelligence and culture, full independence of an individual—all qualities that will evolve naturally as a result of the education and the conditions pertaining in the future society—will guard everyone against committing acts that would be to his disadvantage. The men and women of the future society will possess a far higher degree of self-discipline and self-knowledge than those now living. The simple fact that all the stupid prudery and ridiculous affection of secrecy regarding the discussion of sexual matters will have vanished guarantees that intercourse between the sexes will be much more natural than it is today. If two persons who have entered into a union turn out to be incompatible, or are disappointed in or repulsed by each other, morality demands that this unnatural and therefore immoral bond be dissolved. Since the conditions that have up to now condemned a large number of women to either celibacy or the barter of their bodies will have vanished, men will no longer be able to maintain any superiority. On the other hand, the transformed social conditions will remove many of the inhibitions and inconveniences which affect married life today, often prevent it from unfolding, or even render it wholly impossible.

There is a growing awareness among wide circles of the inhibitions, contradictions and unnatural aspects of the position of the woman today, and this awareness finds graphic expression in social literature as well as in fiction, but often in a distorted form. That the present form of marriage is less and less compatible with its purpose no thinking person can deny, and hence it is no wonder that there are even people

who consider freedom in the choice of love and in the dissolution of the bonds already sealed only natural, while they show no inclination to draw the necessary conclusions to the effect that the present social system should be changed. They believe that freedom of sexual intercourse is a thing to which only the privileged classes should be entitled. *Mathilde Reichhardt-Stromberg*, for example, in answer to writer *Fanny Lewald's*¹ campaigning for the emancipation of women, wrote:

"If you (F.L.) demand complete equality for women in social and political life, so *George Sand* must also of necessity be justified in her campaigning for emancipation which aims no higher than that of which man has long since enjoyed undisputed possession. *Indeed, no reasonable grounds can be found to show why only woman's head and not her heart as well should be admitted to this equality and be free to give and take as freely as man.* On the contrary, if woman has by nature the right and consequently the duty—for we should not bury the talent bestowed on us—of exerting her brain tissue to the utmost in the contest with the intellectual titans of the opposite sex, she must also have the right, just as they do, *to preserve her equilibrium by accelerating the circulation of the heart's blood in whatever way may seem appropriate to her.* Do we not all read without the slightest moral indignation how *Goethe*—to choose the greatest of all as an example—again and again wasted his heart's warmth and the ardour of his great soul on yet another woman. An enlightened person finds this only natural, precisely by virtue of the greatness of his insatiable soul, while only the narrow-minded moralist finds fault with this mode of living. Why, then, deride the "great souls" among women! . . . Let us but assume that the whole female sex consists exclusively of great souls like those portrayed by *George Sand*, that every woman is a *Lucrezia Floriani*,² whose children are

¹ *Frauenrecht und Frauenpflicht*. Eine Antwort auf Fanny Lewalds Briefe "Für und wider die Frauen", 2. Auflage, Bonn, 1871.

² *Lucrezia Floriani*—heroine of a novel of the same name by *George Sand*.—Ed.

all children of love and who brought up all these children with true motherly love and devotion, as well as with discernment and sound common sense. What would then become of the world? *There can be no doubt that it could continue to exist and to progress, as it does today, and it might even fare exceptionally well in the process.*"

But why should this be a prerogative of "great souls" and not also of those who are not "great souls"? If a Goethe and a George Sand, to single out these two from the many who acted and are acting like them, could live according to their hearts' dictates—and about Goethe's love affairs whole libraries are published that are devoured by his male and female admirers in rapturous ecstasy—why condemn in others what becomes the subject of ecstatic admiration, when practised by a Goethe or a George Sand?

Admittedly, freedom in choosing the object of love is impossible in bourgeois society—this all our preceding arguments have demonstrated—but place the whole community in social conditions similar to those enjoyed by the social and intellectual *élite*, and the whole community gains access to similar freedoms. In *Jacques* George Sand depicts a husband who judges the adulterous relations of his wife with another in these words: "No human being can command love, no one is guilty if he feels it or ceases to feel it. What debases woman is the lie, adultery is not the hour she gives to her lover but *the night after that which she spends with her husband.*" In accordance with his views, Jacques feels obliged to yield his place to his rival, and in so doing philosophises as follows: "Borel in my place would have quietly beaten his wife and then without blushing have taken her into his arms, debased by his blows and his kisses. There are men who after the oriental fashion kill their unfaithful wife, because they consider her their lawful property. Others fight their rival, kill him or drive him away and then ask the woman they claim to love for kisses and caresses, and the woman then either shrinks back in horror or yields in despair. This is the accepted practice in conjugal love, and it seems to me that the love of pigs is less base and less coarse than that of such

people."¹ Commenting on these passages, Brandes writes: "These truths, which are considered elementary for the *civilised* world of today, were regarded as atrocious fifty years ago." But the "world of property and culture" does not dare even today openly to recognise the principles of George Sand, although it actually lives by them. As in morality and religion, it affects righteousness also in marriage.

What Goethe and George Sand used to do, thousands of others, who bear no comparison with Goethe or Sand, are doing today, without losing the respect of society in the least. All that is needed is a respectable position, the rest comes of itself. This notwithstanding, the liberties enjoyed by a Goethe and a George Sand are immoral judged from a bourgeois viewpoint, because they contradict the moral laws invoked by society and are incompatible with the nature of our social conditions. Arranged marriages are the normal practice in bourgeois society, the only "moral" union of the sexes. Bourgeois marriage is, we have proved this beyond contradiction, the consequence of bourgeois property relations. Closely bound up with private property and the right of succession, it is entered into for the purpose of begetting "legitimate" children as heirs. And under the pressure of the social conditions it is also forced upon those who have nothing to bequeath²; it becomes a social law, whose violation the state punishes by sentencing men and women who live in adultery and who have separated to terms of imprisonment.

In socialist society there is nothing to be bequeathed, unless one regards domestic utensils and personal belongings

¹ Georg Brandes, *Die Literatur des neunzehnten Jahrhunderts*, 5, Band, Leipzig, 1883, Veit & Co.

² Dr. Schäffle writes in his *Bau und Leben des sozialen Körpers*: "A loosening of the bonds of matrimony by facilitating divorce is certainly undesirable, it would contradict the moral tasks of human mating and would be prejudicial to the maintenance of population level, as well as to the education of children." From the above it follows that we not only consider this view wrong but are inclined to consider it "immoral". Dr. Schäffle himself would admit that it would be impossible to introduce or preserve in a society much more civilised than the present one institutions which conflict with its conceptions of morality.

as an inheritance; hence, the modern form of marriage becomes obsolete. The question of inheritance is thereby solved and socialism does not have to bother to abolish it. Once there is no private property, there can be no right of inheritance. Thus, woman is *free* and her children do not restrict her freedom, they can only multiply the joy she gleans from life. Nurses, teachers, women-friends, the rising female generation are at hand to assist the mother when she needs help.

It is possible that there will be men in the future who will say with *Alexander von Humboldt*: "I was not made to be the father of a family. Moreover, I consider marrying a sin and the begetting of children a crime." What of it? With others the power of natural instincts will see to it that equilibrium is maintained. We are worried neither by the hostility to marriage of a Humboldt nor by the pessimistic philosophy of a Schopenhauer, Mainländer or von Hartmann, who hold out for mankind the prospect of self-destruction in the "ideal state". In this respect we agree with F. Ratzel who has every justification for writing:

*"Man must no longer look upon himself as an exception to the laws of Nature, but should at last begin to look for the regularities that underlie his own actions and thoughts, and strive to lead his life in accordance with natural laws. He will arrive at the point when co-existence with his fellows, that is, the family and the state, will be organised not according to the precepts stemming from long-forgotten centuries but in accordance with rational principles of the knowledge he has of Nature. Politics, morality, legal principles, which are still gleaned from all possible sources, will be determined according to the laws of Nature alone. An existence worthy of the human being that man has dreamed of for millennia will at last become reality."*¹

That day is approaching with *rapid strides*. Human society has, in the course of millennia, traversed all previous phases of development in order finally to arrive at the point

¹ Quoted in Hæckel's *Natürliche Schöpfungsgeschichte*, 4. Auflage.

where it started from, to communistic property and to full equality and fraternity, but no longer among congeners alone, but *among the whole human race*. Such is the great progress it makes. What bourgeois society strived for in vain and where it runs aground, and is bound to do so, is in establishing freedom, equality and fraternity for all people, a goal which socialism will achieve. Bourgeois society was able to evolve only the theory, but here, as in many other respects too, its practice was at odds with its theories. Socialism will combine theory and practice.

Yet, while man returns to the starting-point in his development, this is effected on an infinitely higher cultural level than the one from which he started. Primitive society had common property in the gens, in the clan, but only in the crudest form and at an extremely low level of development. The development that has since taken place has, on the one hand, done away with common property, apart from small and insignificant vestiges, has broken up the gens and finally atomised the whole of society, while at the same time during its various stages it has enormously increased the productive forces of society and the diversity of requirements, created nations and great states from among the gens and tribes, but simultaneously produced once more a state of affairs that stands in blatant contradiction to society's requirements. The task of the future is to resolve this contradiction by transforming property and the means of production back into collective property on the broadest possible basis.

Society takes back what was once its own and what it has created, but, in accordance with the newly created living conditions, it makes possible for all its members a standard of living on the *highest* cultural level, *that is, it grants to all what under more primitive conditions was the privilege of individuals or of individual classes*. To woman, too, is *restored* the *active* role she played in primitive society, not a dominating role, but the role of man's equal.

"The end of the development of the state resembles the beginning of human existence. The original equality finally

returns. The maternal element opens and closes the cycle of everything human"—Bachofen wrote in his *Matriarchy* and Morgan said:

"Since the advent of civilisation, the outgrowth of property has been so immense, its forms so diversified, its uses so expanding *and its management so intelligent in the interests of its owners, that it has become, on the part of the people, an unmanageable power.* The human mind stands bewildered in the presence of its own creation. The time will come, nevertheless, when human intelligence will rise to the mastery over property, and define the relations of the state to the property it protects, as well as the obligations and the limits of the rights of its owners. *The interests of society are paramount to individual interests, and the two must be brought into just and harmonious relations.* A mere property career is not the final destiny of mankind, if progress is to be the law of the future, as it has been of the past. The time which has passed away since civilisation began is but a fragment of the past duration of man's existence; and but a fragment of the ages yet to come. *The dissolution of society bids fair to become the termination of a career, of which property is the end and aim; because such a career contains the elements of self-destruction.*

"Democracy in government, brotherhood in society, equality in rights and privileges, and universal education, foreshadow the next higher plane of society to which experience, intelligence and knowledge are steadily tending.

"It will be a revival, in a higher form, of the liberty, equality and fraternity of the ancient gentes."¹

Thus, men representing diverse points of view arrive, on the basis of their scientific investigations, at identical conclusions. The complete emancipation of woman, and her equality with man, is the final goal of our cultural development, the achievement of which no power on earth can prevent. But it is possible only on the basis of a transformation that abolishes all domination of man by man, and hence also

¹ Lewis H. Morgan, *Ancient History*, New York, 1878, p. 552.

that of the worker by the capitalist. Only now will human development reach its peak. The "Golden Age" men have been dreaming of for millennia and for which they have yearned, will come at last. *An end will be put to class domination once and for all, and with it to man's domination of woman.*

IX INTERNATIONALISM

An existence worthy of man for all members of society cannot be the way of life of a single privileged people, since it would be unable to establish or maintain such a state in isolation from all other peoples. Our entire development is the product of co-operation between national and international forces and the consolidation of the ties between them. Although for many people the national idea still holds sway and provides an instrument for the maintenance of political and social domination, which is possible only within national boundaries, we are already deep in internationalism.

Treaties on commerce, tariffs and shipping, the Universal Postal Union, international exhibitions, congresses on international law and measurements, other international scientific congresses and associations, international scientific expeditions, our trade and communications, notably the international congresses of working men, who are the bearers of the new era and whose moral influence made possible the first international conference for labour legislation in Berlin in the spring of 1890 at the invitation of the German Empire—all this testifies to the international character the relations between the various advanced nations are increasingly assuming despite national isolation. We speak of the *world economy*, as opposed to national economy, and attach more importance to the former, because the well-being and prosperity of individual nations largely depend on it. A large part of our own products is exchanged against the products of foreign countries without whom we are no longer able to exist. And just as one branch of industry is injured when another branch suffers, so the production of one nation suf-

fers considerably when that of another is paralysed. Relations between individual countries become ever closer despite such temporary disturbances as wars and incitement of one nation against another, because they are subject to material interests which are the strongest of all. Every new highway, every improvement of a means of communication, every invention or improvement in production, which leads to a cut in the cost of goods, consolidates these relations. The ease with which direct relations are established between mutually remote countries and peoples is a new powerful factor in the chain of relations. Emigration and colonisation are additional powerful stimuli. Nations learn from each other, and each seeks to excel. Together with the exchange of material products of the most diverse kinds, there also proceeds an exchange in intellectual values, both in the original language and also in translation. The study of modern languages becomes a necessity for millions. Next to material advantages nothing contributes more towards removing antipathy and establishing cordial understanding than the grasp of the language and intellectual values of a foreign people.

The effect of this process of drawing together that is proceeding on an international scale is that countries are *coming to resemble each other more and more as regards their social conditions*. Among the advanced and *therefore standard-setting* nations this similarity is already so great that those who have learned to understand the economic structure of one nation also understand, in the main, that of all the others. The same rule applies as in Nature: where among animals of the same species the skeleton is identical in its organisation and structure, and if we possess part of such a skeleton we can in our mind's eye reconstruct the whole animal.

A further result of this similarity is that where identical social foundations exist, the effects they produce must also be identical: the accumulation of great wealth and its antithesis—wage-slavery, the enslavement of the masses by machinery, domination of the masses by a propertied minority and all the consequences stemming therefrom.

Indeed, we see that the class antagonisms and the class struggle raging in Germany are stirring up the whole of Europe, the United States, Australia, etc. In Europe, from Russia to Portugal, from the Balkans, Hungary and Italy to England and Ireland, the same spirit of discontent prevails, and the same symptoms of social ferment, general malaise and disintegration make themselves felt. Externally dissimilar, depending on the degree of their development, the character of the population and the form of its political system, these movements are essentially the same wherever they appear. Deep social antagonisms are what cause them. Every year these antagonisms become more pronounced, the ferment and discontent permeate society ever deeper and spread their roots ever wider, until finally some incident, possibly an insignificant one, sparks off an explosion that spreads like lightning through the entire civilised world and calls upon all thinking people to take sides for or against.

The struggle of the new world against the old has broken out. The masses step upon the stage, an abundance of intelligence is being applied to this struggle, such as the world has never seen before and will never see again in a similar struggle. *This is because it is the last social struggle.* Standing at the rise of the 20th century, we see how this struggle is drawing ever closer to its last phase, in which the new ideas shall triumph.

The new society will then rise up on an international foundation. The peoples will fraternise, they will stretch out their hands to one another and will strive gradually to extend the new conditions to all the peoples of the earth.¹ One nation will no longer approach another as an enemy, intent on exploiting or oppressing it, or as the representative of an alien faith, which it wants to impose upon the other, but as a friend who wants to educate all humans so as to make them cultured. The efforts of the new society to civilise and colonise

¹ "Today national and human interests oppose each other as enemies. At a higher stage of civilisation, these interests will coincide and become as one." Thünen, *Der isolierte Staat*.

will differ as regards their essence and their means from the present ones, just as the two social systems differ radically in their essence. Neither powder nor shot, neither "firewater" (brandy) nor the Bible will be used, the civilising mission will be carried out only with friendly means, which will make the civilisers appear to the barbarians and savages not as enemies, but as *benefactors*. Intelligent travellers and scientists have long since learned how successful this approach is.

Once the civilised peoples have united in a large federation, the time will have come when the "storms of war" will have subsided forever. Eternal peace will then no longer be a dream, as the gentlemen strutting about in uniform would have the world believe. The time has come when the peoples have realised where their genuine interests lie. These will be promoted not through struggle and dissension or through armaments ruining whole countries and peoples, but through mutual understanding and cultural collaboration. Moreover, the ruling classes and their governments see to it that an end is put to armaments and wars because of their monstrosity. Thus the latest weapons, like so many before them, will find their way into collections of antiques, where they will demonstrate to future generations how their predecessors have for thousands of years frequently torn one another apart like wild beasts—until man finally triumphed over the beast in him.

That only national peculiarities and conflicts of interests—which are everywhere nourished artificially by the ruling classes so that when the occasion demands a great war may furnish an outlet for dangerous tendencies at home—engender wars is confirmed by a remark of the late General Field-Marshal *Moltke*. In the first volume of his literary legacy, which deals with the Franco-Prussian War of 1870-71, this passage is to be found in the introductory observations:

"So long as nations lead separate existences, there will be controversies which can be settled only by arms, but it is to be hoped in the interests of humanity that wars may become as rarer as they have become more fearful."

This national separate existence, that is, the hostile shut-

ting off of one nation from another, will gradually vanish despite efforts on every side to retain it, and thus future generations will with no difficulty accomplish tasks which brilliant minds have long since contemplated and attempted to resolve without success. Thus, Condorcet conceived the idea of an international language. And the late Ulysses S. Grant, ex-President of the United States, said in a public address: "As commerce, education, and the prompt transmission of thoughts and matter by telegraph and steamer have changed everything, I believe that God is preparing the world to become *one* nation, to speak *one* language, and to attain to a state of perfection in *which armies and fleets of war will be no longer needed.*" It is natural that for a pure-blooded Yankee the equalising role is to be played by the dear God, a role which is solely the product of historical development. Yet this is only to be expected. Hypocrisy, or again ignorance in questions of religion, is nowhere greater than in the United States. The less the state uses its organisation to lead the masses, the more this has to be done by religion, by the Church. That is why the bourgeoisie seems most pious, where state power is at its most lax. After the United States come England, Belgium and Switzerland. Even the revolutionary Robespierre, who played with the heads of aristocrats and priests as if they were nine-pins, was known to be very religious, which explains why he solemnly reinstated the Supreme Being, whom the Convention, in equally bad taste, had shortly before declared dethroned. And since before the Great Revolution the frivolous and dissolute aristocrats of France had frequently vaunted their atheism, Robespierre regarded atheism as aristocratic and denounced it in his speech to the Convention on the Supreme Being in the following words: "*Atheism is aristocratic.* The idea of a Supreme Being that watches over oppressed innocence and punishes triumphant crime is in keeping with the spirit of the people. *If there were no God, one would have to be invented.*" The virtuous Robespierre had a foreboding that his virtuous bourgeois republic would be unable to settle social antagonisms, hence his faith in a Supreme Being that metes out

punishment and seeks to settle what people in his time were unable to settle, hence this belief was necessary for the first republic.

This will soon no longer be the case. One cultural advance will evoke another, and mankind will continue to set itself new tasks and their accomplishment will lead to a stage of cultural development which will not know national hatred, wars, religious strife and similar remnants of the past.

X

THE POPULATION PROBLEM AND SOCIALISM

1. FEAR OF OVERPOPULATION

There are people who consider the *population problem* the most important and pressing problem, because "overpopulation" threatens us, is, in fact, already at hand. This problem in particular must be treated from an international standpoint, for the feeding and distribution of people are increasingly becoming an international issue. Since Malthus, the law of population increase has been widely disputed. In his once famous and now notorious *Essay on the Principles of Population*, which Karl Marx characterised as a "school-boyish, superficial and pulpiteer piece of declamatory plagiarism from Sir James Stewart, Townsend, Franklin, Wallace, etc.", and which "contains not a single original sentence", Malthus advances the view that humanity has the tendency to increase in geometrical progression (1, 2, 4, 8, 16, 32, etc.), while subsistence can be increased only in arithmetical progression (1, 2, 3, 4, 5, etc.). The inevitable result is that a rapid disproportion will emerge between the size of the population and the supply of food, which inevitably will lead to mass poverty and eventually to mass mortality. It is therefore essential to observe "abstinence" in procreation. He who does not possess sufficient means to support a family should not be allowed to marry, for otherwise there will be no place at the "table of Nature" for his descendants.

The fear of overpopulation is very old. It existed with the Greeks and Romans and again at the close of the Middle Ages. Plato and Aristotle, the Romans and the petty bourgeois of the Middle Ages were all swayed by it, and it also gripped Voltaire, who published a treatise on the subject in the first quarter of the 18th century. Other authors followed

him until finally these fears found their most forcible expression in the writings of Malthus.

The fear of overpopulation always appears at periods when the existing social conditions are disintegrating. The general discontent which then flares up is ascribed primarily to the excess of people and the lack of food and not to the manner in which it is produced and distributed.

All exploitation of man by man is based on class rule. The first and principal means of class rule is the appropriation of land. Communal land gradually becomes private property. The mass is rendered propertyless and is forced to earn its portion of the means of subsistence in the service of the property owners. In such circumstances every addition to the family, or every new rival, is regarded as a burden. The spectre of overpopulation looms up, and the terror that it spreads is in direct proportion to the concentration of the land in a few hands and losses in productivity, be it because it is not cultivated sufficiently or because the best lands are turned into sheep pasture or are reserved for the pleasure of their owners as hunting-grounds, and are thus no longer available for the cultivation of food. Rome and Italy were worst off for food when the land was in the hands of about 3,000 latifundists. Hence the cry: "the latifundia are ruining Rome." The land in Italy was converted into huge hunting-grounds and pleasure gardens for its noble owners, was frequently allowed to lie idle, because its cultivation by slaves was more expensive than the grain imported from Africa and Sicily, a state of affairs that opened the doors to grain profiteering, a practice in which Rome's rich nobles also played the leading role. This even came to constitute a major reason for neglecting land cultivation at home. The nobility gained more from grain profiteering than from grain cultivation on their own lands.

In these circumstances the Roman citizens and the impoverished nobles preferred to renounce marriage and the begetting of children, which all the premiums, granted for marriage and children in order to prevent the decrease of the ruling classes, were unable to prevent.

A similar phenomenon appeared towards the end of the

Middle Ages, after the nobility and clergy had, in the course of centuries through all manner of intrigue and violence, robbed numerous peasants of their property and appropriated the common land. When, as a result of all the ill-treatment the peasants had suffered, they revolted but their uprising was crushed, the robbery of the nobility continued on a still wider scale, and was even practised by princes who belonged to the reformed church in respect of church estates. The number of robbers, beggars and vagabonds grew larger than it had ever been before, and reached its peak shortly after the Reformation.¹ The expropriated peasants poured into the cities, but there, owing to the causes described above, living conditions were steadily deteriorating and, hence, "overpopulation" prevailed everywhere.

The advent of Malthus coincides with the period of English industrial development when, as a result of the inventions of Hargreaves, Arkwright and Watt, enormous changes were taking place in both mechanics and technology, which affected mainly the cotton and linen industries, and put tens of thousands of workers in the respective cottage industries out of a job. The concentration of landed property and the development of large-scale industry assumed vast proportions during that period in England. As wealth rapidly increased on the one hand, mass poverty spread on the other. At such a time the ruling classes had every reason to regard the existing world as the best of all possible worlds, and to seek for so contradictory a phenomenon as the pauperisation of the masses in the midst of growing wealth and flourishing industry an explanation that would be plausible and shift the blame from them. Nothing was more convenient than to lay

¹ A broad protest movement against the Catholic Church which developed in the 16th century in Germany, Switzerland, England, France, the Netherlands, Scandinavia, Austria, Bohemia, Hungary and Poland. It was essentially an anti-feudal movement, being directed against the organisation and ideology of medieval Catholicism. In most countries it was accompanied by fierce class battles—the German Peasant War of 1524-25, and the bourgeois revolutions in England and the Low Countries (17th and 16th centuries respectively).—*Ed.*

the blame upon the too rapid swelling of the workers' ranks as a result of procreation, instead of upon the capitalist mode of production and the accumulation of the land in the hands of the landlords which made countless workers redundant. In such circumstances, the "schoolboyish, superficial and pulpiteer piece of declamatory plagiarism" that Malthus published, was an explanation of existing ills, which expressed the innermost thoughts and wishes of the ruling class, and justified them before the world. This accounts for the ecstatic approval it found in one quarter and the violent opposition in the other. *Malthus came up with the right word at the right time for the English bourgeoisie and thus, although his essay "contained not a single original sentence", he became a great and celebrated figure and his name synonymous of the whole doctrine.*¹

2. CAUSES OF OVERPOPULATION

The conditions that caused Malthus to give his alarm signal and to proclaim his harsh teachings—he addressed them to the working class, thus adding insult to injury—have since spread with every passing decade. They have spread not only in Great Britain, Malthus's native land, but also in all countries with a capitalist mode of production, which gives rise to plundering of the land and the enslavement of the masses by machinery and the factory. This system divorces the worker from his means of production, whether these be land or tools, and transfers them to the capitalists. This system creates ever new branches of industry, develops and concentrates them, but it also throws ever new masses of people into the street, making them "redundant". Frequently, as in Ancient Rome, it promotes latifundia with all their attendant consequences. Ireland is the classical example in Europe being

¹ That Darwin and others have also become blind adherents of Malthus only shows that lack of economic knowledge leads to extremely one-sided views in the field of natural science.

worst afflicted by the English system of land-plunder. As far back as 1874, it had 12,378,244 acres of meadows and pastures but only 3,373,508 acres of arable land, and every year the population decreases while at the same time more and more arable land is converted into meadows and pastures for sheep and cattle and hunting-grounds for the landlords.¹ (In 1908—14,805,046 acres of meadows and pastures and 2,328,906 acres of arable land.) Besides, much of the arable land in Ireland is in the hands of a large number of small and very small tenants, who are not able to make the most of the land. Thus, Ireland appears to be an agricultural land becoming once more a land of pastures. At the beginning of the 19th century the population numbered over 8 million and it has since declined to about 4.3 million, and yet several million are redundant. The rebellion of the Irish against England is thus easily explained. *Scotland* presents a picture similar to that of Ireland with regard to landownership and cultivation of the soil.² A similar state of affairs is also to be

¹ Ferdinand Freiligrath sings in the moving poem "Ireland":
The landlord knows no other care
But that the husbandman should rear
More cattle to provide his fare.
Damp cowsheds? Why should landlords fear,
Though men and kine die everywhere
In Irish marshlands far and near.
The furrows that once yielded wheat
Lie fallow in this land of doom
Where only waterhens and geese
Raise plaintive voices in the gloom.
Millions of acres gone to waste
In hunting grounds for the landlord caste!

² "*Two millions of acres* . . . totally laid waste, embracing within their area some of the most *fertile* lands of Scotland. The natural grass of Glen Tilt was among the most nutritive in the county of Perth. The deer-forest of Ben Alder was by far the best grazing ground in the wide district of Badenoch; a part of the Black Mount forest was the best pasture for black-faced sheep in Scotland. Some idea of the ground laid waste for purely *sporting purposes* in Scotland may be formed from the fact that it embraced an area larger than the whole county of Perth. The resources of the forest of Ben Alder might give some idea of the loss sustained from the forced desolations. The ground would pasture

found in *Hungary*, a country where modern progress has only made its mark in recent decades. A land, so rich in fertile soil as few in Europe, is deeply in debt, its population is impoverished and at the mercy of usurers. In despair people are emigrating en masse. But the land is concentrated in the hands of modern capitalist magnates, who barbarously exploit woods and arable land so that Hungary will in the near future cease to be a grain-exporting country. A similar situation prevails in Italy. In that country, just as in Germany, the political unity of the nation has greatly promoted capitalist development, but the industrious peasants of Piedmont and Lombardy, Tuscany, Romagna and Sicily are growing ever poorer and are on the verge of ruin. Swamps are again beginning to cover the ground where several decades ago there were well tended gardens and plots belonging to small peasants. Before the gates of Rome, in what is called the Campagna, hundreds of thousands of hectares of land lie idle, an area that once numbered among the most flourishing in Ancient Rome. Swamps cover the land and give off poisonous miasma. If, with the application of the proper means, the Campagna were thoroughly drained and properly irrigated, the population of Rome would receive a rich source of food and enjoyment. But Italy suffers from the ambition to become a great power, it ruins the population by bad administration, by expenditure on military and maritime armaments and "colonisation", and therefore has no funds available for cultivation tasks, such as reclaiming the Campagna. Conditions similar to those in the Campagna also prevail in Southern Italy and Sicily. The latter, once the granary of Rome, sinks ever deeper into poverty; no people in the whole of Europe is as poverty-stricken and maltreated as that of Sicily. The easily contented sons of Europe's most

15,000 sheep, and it was not more than *one-thirtieth part of the old forest ground in Scotland*. All that forest land is as totally unproductive. . . . It might thus as well have been submerged under the waters of the German Ocean. . . ." The London *Economist* of July 2, 1866, quoted by Marx in *Das Kapital* 1. Band, 2. Auflage (Karl Marx, *Capital*, Vol. I, Moscow, 1965, p. 733.—Ed.)

beautiful country flood half of Europe and America as wage-squeezers or else emigrate en masse from that country for ever, because they do not want to starve on their native soil, which is not their property. Malaria, that most dire of fevers, spread over Italy to such an extent that the government, alarmed at this as far back as 1882, instituted an investigation which brought to light the deplorable fact that of the 69 provinces of the land, 32 were severely afflicted by the disease, in 32 it had already gained foot, and only five had so far been spared. The disease, which was formerly to be found only in rural areas, penetrated the cities, where the crowded urban proletariat, whose numbers have multiplied as a result of the influx of the rural proletariat, forms hotbeds of infection.

3. POVERTY AND FECUNDITY

From whatever angle we consider the capitalist mode of production, we are taught that the want and misery of the masses are not a consequence of an insufficiency of food and means of subsistence, but a consequence of their unequal distribution and economic mismanagement, which furnishes abundance for some and condemns others to starvation. Malthusian contentions make sense only from the standpoint of the capitalist mode of production. On the other side the capitalist system encourages the procreation of children: it needs cheap labour in the shape of children for its workshops and factories. The procreation of children becomes a matter of calculation for the proletariat—they have to earn enough to be able to support themselves. The proletariat in cottage industry is even obliged to have many children for this guarantee his competitiveness. This undeniably abominable system intensifies the pauperisation of the worker and his dependence on the entrepreneur. The proletariat is compelled to work for an ever more pitiful wage. And every measure of labour protection, every additional expenditure for some social duty, which an employer is not obliged to

introduce for the workers engaged in his cottage industry, prompts him to increase the number of employees in the cottage industry, for that type of industry holds out advantages he will not easily find in any other form of production, provided the particular production process is feasible in such conditions.

The capitalist mode of production, however, leads not only to overproduction of commodities and workers, but also of the intelligentsia. Members of the intelligentsia also find it ever more difficult to find employment; supply permanently exceeds demand. Only one thing is not redundant in the capitalist world—capital and its owner, the capitalist.

If bourgeois economists are followers of Malthus, this is natural in view of their bourgeois interests, only they should not extend their bourgeois whims to socialist society. John Stuart Mill writes: "...Communism is precisely the state of things in which opinion might be expected to declare itself with greatest intensity against this kind of selfish intemperance. Any augmentation of numbers which diminished the comfort or increased the toil of the mass, would then cause immediate and unmistakeable inconvenience to every individual in the association, inconvenience which could not then be imputed to the avarice of employers, or the unjust privileges of the rich. In such altered circumstances opinion could not fail to reprobate, and if reprobation did not suffice, to repress by penalties of some description, this or any other culpable self-indulgence at the expense of the community. The Communistic scheme, instead of being peculiarly open to the objection drawn from danger of overpopulation, has the recommendation of tending in an especial degree to the prevention of that evil."¹ And Professor A. Wagner says on page 376 in Rau's *Manual of Political Economy*: "Least of all could freedom of marriage or freedom of procreation be granted in a socialist community." The above writers proceed from the conception that the tendency towards overpopulation is common to all social conditions, but both allow

¹ John Stuart Mill, *Principles of Political Economy* London, 1868, p. 127.—Ed.

that socialism is able to establish an equilibrium between the population and food supplies better than any other form of society. The latter assertion is true, while the former is not.

Indeed there were some socialists who, corrupted by Malthusian ideas, feared that the danger of overpopulation was imminent. But these socialist Malthusians have disappeared. A deeper study of the nature and essence of bourgeois society teaches them better. We also learn from the plaintive songs of our agrarian experts that we produce too much food—from the viewpoint of the world market—so that the resulting low prices make food production unprofitable.

Our Malthusians imagine, and the chorus of the bourgeois spokesmen echo them thoughtlessly, that the members of a socialist society in which there is freedom to choose the object of their love and an existence worthy of man is provided for all, will begin to breed like rabbits; they would succumb to the most dissolute sexual indulgence and mass procreation. The reverse is likely to happen. Up to now the largest number of children were to be found, as a rule, not in the best but the worst situated families. We may even state without being guilty of exaggeration that *the more miserable the lot of a proletarian stratum, the more on average is it blessed with children, apart from occasional exceptions*. This is confirmed by Virchow, who wrote in the middle of the 18th century: "As the English worker in his deepest degradation, completely deprived of mental stimulus, knows only two sources of enjoyment, intoxication and copulation, so did the population of Upper Silesia *until recent years* concentrate all its desires, all its strivings on these two things. Liquor and the gratification of the sexual instinct had become sovereign with it, and it is thus easily explained that the population gained as rapidly in number as it lost in physical vigour and moral fibre."

Marx expresses similar views in *Capital*: "In fact, not only the number of births and death, but the absolute size of the families stand in inverse proportion to the height of wages, and therefore to the amount of means of subsistence

of which the different categories of labourers dispose. *This laws of capitalistic society would sound absurd to savages, or even civilised colonists.* It calls to mind the boundless reproduction of animals individually weak and constantly hunted down."¹ Marx goes on to quote Laing, who says: "If the people were all in easy circumstances, the world would soon be depopulated." Laing thus holds views opposed to those of Malthus: a good standard of living is conducive not to an increase but to a decrease in births. Herbert Spencer writes in the same vein: "*Always and everywhere* perfection and reproductive capacity are opposed to each other. From this follows that the further progress mankind looks forward to will *probably result in decrease of procreation.*"

We see that people who hold very different views on other matters fully agree on this point, and we concur with them.

4. SHORTAGE OF PEOPLE AND SURPLUS OF FOOD

The whole question of population could be easily disposed of with the observation that there is no danger of overpopulation in sight, for we are faced with an excess of food which even threatens to increase with every year, so that the worry of what to do with this wealth is far greater than the worry as to whether it should suffice. The producers of foodstuffs would even eagerly welcome a rapid increase of consumers. But the Malthusians do not tire of raising objections and we must therefore counter these, lest they should take refuge in the pretext that their objections cannot be refuted.

They claim that the danger of overpopulation in the not too distant future lies in the law of "diminishing returns". Our fields become "exhausted", increasing harvests can no longer be expected and, since the land fit for cultivation constantly becomes scarcer, the danger of a scarcity of food

¹ Karl Marx, *Capital*, Vol. I, Moscow, 1965, p. 643.—Ed.

is imminent if the population continues to increase. We believe it to have been proved beyond doubt in the chapters on the utilisation of the soil in agriculture what enormous progress mankind can make with respect to the production of new food supplies even at the present level of agricultural science, but we should like to give a few more examples. A very able big landowner and recognised economist, a man who excelled Malthus in both respects, said as early as 1850, a time when agrochemistry was still in its infancy: "The output of raw products, namely of *foodstuffs*, will in future not lag behind the output in manufacture and transportation. . . . Agrochemistry is now only just starting to open up for agriculture prospects which, even though they will no doubt still cause to take many a false path, *will in the end place the production of foodstuffs under control of society, to the same extent as it now is in its power to furnish any amount of cloth*, provided requisite supplies of wool are available."¹

Justus von Liebig, the founder of agrochemistry, holds the view that "if human labour and fertilisers are available in sufficient quantities, the soil is inexhaustible and can provide abundant harvests year in year out". The law of diminishing returns is a Malthusian whim that could be accepted at a very low level of cultivation, but which has, however, long since been refuted by science and experience. The law is rather this: "*The yield of a field stands in direct proportion to the human labour expended (science and machinery included) and the proper fertilisers applied to it.*" If it was possible for France with her small-peasant holdings to more than quadruple the yield of her soil in the past ninety years, without the population even doubling, far better results are to be expected of a society with a socialist economy. The Malthusians furthermore overlook the fact that in existing conditions not only our soil should be taken into account, but also the soil of the whole earth, that is, largely countries whose fields yield twenty, thirty and even more times as much as our fields of the same size. True, the earth's resources

¹ Rodbertus, *Zur Beleuchtung der sozialen Frage*, 1850.

have by now been extensively harnessed by man, *yet, a small fraction excepted, it is nowhere cultivated and utilised as effectively as it could be.* Not only Great Britain could produce much larger supplies of foodstuffs than it does today, but also France, Germany, Austria, and this applies in still greater measure to the other countries of Europe. In little Württemberg with its 879,970 hectares of arable land, the mere introduction of the steam plough could raise the grain yield from 6,140,000 centners to 9,000,000 centners.

European Russia, measured by the present level of the population of Germany, could feed instead of her present population of about 100 million, one of 475 million. Today European Russia has about 19.4 inhabitants per square kilometre, Saxony over 300.

The objection that Russia contains vast stretches of land, where the climate renders impossible any high degree of fertility, is true, but, on the other hand, she has in the south a climate and soil far better suited to agricultural production than those of Germany. Then, again, the growing density of the population and the improved soil cultivation, which it brings in its wake, will lead to changes in climate which today even defy estimation. Wherever people amass, climatic changes follow. We attach too little importance to these phenomena, nor are we able to realise their full implications, because we have no occasion to and, as things are at present, no possibility to carry out large-scale experiments. Sweden and Norway, for example, so sparsely populated today, would, with their vast woods and truly inexhaustible mineral wealth, numerous rivers and long coast lines, furnish rich sources of food for a dense population. The requisite means and appliances are not obtainable in present circumstances and as a result part even of their sparse population emigrates.

What may be said of the north applies to an incomparably greater degree to the south of Europe—Portugal, Spain, Italy, Greece, the Danubian states, Hungary, Turkey, etc. An excellent climate, a soil so abundant and fertile as is hardly to be found in the most favoured regions of the United States, will some day furnish uncounted people with *abundant*

nourishment. The corrupt political and social conditions in those countries cause hundreds of thousands to leave Europe and to cross the ocean, instead of remaining at home or settling in other countries that are much nearer and more conveniently located. As soon as rational social and political institutions are established, new millions of people will be needed to raise those extensive and fertile lands to a higher level of cultivation.

For a long time to come, if *considerably* higher cultural goals are to be achieved in Europe, there will be a *shortage* rather than an excess of people, and it is absurd under such circumstances to entertain any fears of overpopulation.¹ It must constantly be kept in mind that the utilisation of available food sources, with the help of science and labour, *knows no limits since every day brings new inventions and discoveries multiplying food sources.*

If we pass from Europe to other continents, the *shortage of people and superfluity of land appear even more blatant.* The most abundant and fertile lands of the earth lie *completely* or almost completely unused, because the task of their reclamation and utilisation cannot be undertaken by several thousand people, but *a mass colonisation of many millions is required in order to bring this too abundant Nature, if even to some extent, under human control.* To this category belong, among others, Central and South America, a territory of hundreds of thousands of square miles. Argentina, for example, had in 1892 about five million hectares under cultivation; the country has, however, 96 million hectares of fertile land at its disposal. The soil of South America suitable for growing corn and now lying fallow is estimated at 200 million hectares at least, whereas the United States, Austria-Hungary, Great Britain and Ireland, Germany and

¹ This also applies to Germany in particular; despite the steady increase in population, emigration has declined just as steadily—in 1891, for example, 120,089 people emigrated, in 1907—only 31,696. Conversely, immigration has increased, because there was a lack of native workers in various branches of industry. The number of immigrants was 757,151 in 1900, and 1,007,149 in 1905.

France, taken together, have only about 105 million hectares under cereals. *Carey* maintained forty years ago that the 360-mile long Orinoco valley alone could supply sufficient food *to feed the whole human race*. Let us halve this estimate and there is still more than enough. In any case, South America alone could feed *several times* the present world population. The ratio of the nutritive value of a field planted with banana trees to one of the same size under wheat is 133 to 1. While our wheat yields on favourable soil 12 to 20 times its seed, rice yields in its native soil 80 to 100 times, maize—250 to 300 times its seed, and in some areas, for example, in the Philippines, rice yields are estimated at 400 times as much. It is also important in connection with all these types of food to make them as nourishing as possible in the course of their preparation. In the field of nutrition chemistry has boundless scope for development.

Central and South America, especially Brazil, which alone is almost as large as the whole of Europe—Brazil has a territory of 8,524,000 square kilometres and about 22 million inhabitants, as against Europe's 9,897,010 square kilometres and about 430 million inhabitants—boast a luxuriance and fertility that call forth the astonishment and admiration of all travellers. Besides, these countries have inexhaustible ore and metal deposits. Yet, they are still almost closed to the rest of the world, because their population is indolent and too small in number, and has as yet attained too low a level of civilisation to master powerful Nature. Discoveries of recent decades have shown how things stand in Africa. Even if a good part of Central Africa will never be suitable for European agriculture, there are other regions of vast size that can be put to good use the moment rational principles of colonisation are applied. On the other hand, there are in Asia vast and fertile territories that could provide food for countless millions. The past has shown how in places that are now barren and almost desert, the mild climate wrests rich nourishment from the soil, if man knows how to go about supplying it with life-giving water. Through the destruction of the marvellous aqueducts and irrigation instal-

lations in Western Asia, the valleys of the Tigris and Euphrates, etc., through vandalic wars of conquest and insane oppression of the local population, thousands of square miles were transformed into sandy deserts.¹ The same thing happened in North Africa, Mexico and Peru. If civilised people settle in these regions by the million, inexhaustible sources of food will be unlocked. The fruit of the date-palm thrives in incredible profusion in Asia and Africa, and it takes up so little room that 200 trees can be planted on a morgen of land. Durra² bears fruit in Egypt more than 3,000-fold, and yet the country is poor. This is due not to overpopulation, but to vandalic exploitation that has resulted in the desert spreading ever further from decade to decade. The wonderful results that could be obtained in all these countries by adopting the agricultural and horticultural techniques of Central Europe defy all calculation.

Given the *present* level of agriculture the *United States* could *easily* feed fifteen and twenty times its present population (85 million), that is, 1,250 to 1,700 million people. Similarly *Canada* could feed instead of six million, hundreds of millions. Then, for example, there are Australia and the numerous islands of the Pacific and Indian Oceans, several of which are large and extraordinarily fertile. *To multiply and not reduce the number of people* is the appeal now addressed to mankind in the name of civilisation.

Everywhere, it is the social institutions, the existing mode of *production* and *distribution*, that bring about privation and misery, *not a surplus* of people. Several bountiful harvests *in succession* lower the prices of food to such an extent that many a tiller of the soil is ruined. Instead of conditions for the agricultural producer being improved, they decline. A large number of farmers today *regard a good harvest as*

¹ Kärger estimates the yield in Anatolia even during a bad harvest at 9 to 13 double centners, 26.40 to 39 double centners on an average and 66 double centners on fertilised and irrigated soil (*Die internationale landwirtschaftliche Konkurrenz, ein kapitalistisches Problem von Professor Dr. Gustav Ruhland*, Berlin, 1901).

² A cereal used for food in the form of flakes and flour.—Ed.

a misfortune, because it cuts prices. And this is supposed to be a rational state of affairs! To deprive us of access to abundant harvests from other countries, high grain duties are introduced, thus impeding the import of foreign grain and making prices on the domestic market rise. *We are not faced with a scarcity but a surplus of food, just as we are faced with a similar surplus of manufactured goods.* As millions of people need the diverse articles put out by the factories but are unable to satisfy their needs given the existing property and production relations, so millions of people are in want of food, because they are unable to pay for it, although there is an abundance of it. The insanity of such a situation is obvious. When the harvest is good our corn profiteers often deliberately let crops perish, because they know that prices rise in the measure that products are scarce. And in such conditions we are to fear overpopulation! In Russia, South Europe and many other countries of the world, *hundreds of thousands* of centners of grain perish every year for want of proper storage and transport facilities. Many millions of centners of foodstuffs are wasted every year, because harvesting equipment is inadequate or else because there is a shortage of hands at the vital moment. Many a corn-stack, many a filled barn, and whole estates are burned down, because the insurance premium is higher than the profit they yield; foodstuffs are destroyed for the same reason for which ships are sunk together with their crews.¹ During our military manoeuvres a large part of the crops is ruined every year; the cost of a manoeuvre that lasts only a few days runs into

¹ Similar conditions must have prevailed at the time of St. Basil (who died in 379) for he exhorted the rich: "Wretches that you are, what answer will you give to the divine Judge? You cover the nakedness of your walls with carpets, but do not cover the nakedness of men with clothes! You decorate your horses with costly and soft saddle-cloths and despise your brother covered with rags. *You allow your corn to perish and be devoured in the barns and on your fields and do not spare even a glance for those who have no bread.*" The preaching of morals has from time immemorial had little effect on rulers and will not have any in the future. But once the social institutions are changed so that none can act unjustly towards his fellows, the world will fare well.

hundreds of thousands, and, as everybody knows, this valuation is very moderate, and there are many of them every year. For similar purposes whole villages have been razed to the ground and large areas have been taken from cultivation.

Nor most it be forgotten that the sea provides yet another auxiliary food source; the surface area of water is in the ratio of 18 to 7 to that of the land, or it is two and a half times as large as that of the land, and its enormous wealth of food is still to be rationally exploited. The future holds out prospects quite different from the gloomy picture drawn by our Malthusians.

After all, who can say where the limits to our chemical, physical and physiological knowledge could be set? Who would venture to predict what gigantic undertakings the people of future centuries will execute in order to achieve substantial modifications in climatic conditions and in methods of soil utilisation?

We see today, under the capitalist system, undertakings in execution, which a century ago were thought impossible and insane. Wide isthmuses are cut through and seas are connected. Tunnels many miles long are being cut through the bowels of the earth to link countries separated by extremely high mountains, others are being dug under the bed of the ocean so as to shorten distances and to avoid obstacles and dangers to which countries separated by the sea are exposed. Where then is the point at which someone could say: "So far and no farther!" Not only does modern experience refute the "law of diminishing returns", but there is also a surplus of fertile soil waiting to be cultivated by thousands of millions of people.

If all these cultivation projects were to be tackled simultaneously, *we should have not too many but too few people*. Mankind must multiply considerably in order to cope with all the tasks that lie ahead. Neither is the soil under cultivation being utilised to the full, nor are there *enough people available to cultivate almost three-quarters of the earth's surface*. The relative overpopulation, which the capitalist system continues to produce to the detriment of the worker

and society, *will at a higher stage of civilisation become a blessing*. A population as large as possible does not impede, but promotes cultural progress, just as the existing overproduction of goods and foodstuffs, the disruption of the family by the employment of women and children in modern industry and the expropriation of the middle strata of society by the big capitalists, are all prerequisites for a higher stage of civilisation.

5. SOCIAL RELATIONS AND REPRODUCTIVE CAPACITY

The other side of the question is: do people multiply indefinitely, and *do they feel the need to do so?*

To demonstrate man's great reproductive capacity, the Malthusians usually like to refer to rare cases of exceptional families and peoples. But this proves nothing. As against these cases there are others where complete sterility or negligible reproductive capacity sets in after a short time, despite favourable living conditions. It is surprising how quickly well-to-do families often become extinct. Although the United States affords more favourable conditions than any other country for the increase of the population, and hundreds of thousands of people in their prime immigrate every year, the population doubles only every thirty years. There is no indication of populations doubling within twelve or twenty years anywhere on a large scale.

As indicated by the passages quoted from Virchow and Marx, the population increases fastest *where it is poorest*, because, as Virchow justly claims, sexual intercourse, besides drunkenness, is their only pleasure. When Gregory VII forced celibacy upon the clergy, the priests of lower rank in the diocese of Mainz complained that as distinct from the prelates, who had access to all possible pleasures, they had only one source of comfort, women. A lack of varied occupation may also explain why the marriages of the rural clergy are, as a rule, so fruitful. It is also undeniable that the poorest districts in Germany, the Eulengebirge in Silesia,

the Lausitz, the Erz- and Fichtelgebirge, the Thuringian Forest, the Harz, etc., are those with the densest population, whose chief food is potatoes. It is also certain that the sexual urge is particularly strong in those suffering from consumption, and that the latter often beget children in a state of physical decline when it would seem impossible.

It is a law of Nature, reflected also in the passages quoted from Herbert Spencer and Laing, to compensate through quantity what is lost in quality. The highest and stronger animals—lions, elephants, camels, etc., our domestic animals, such as the horse, donkey, cow, bring few young ones into the world, whereas lower animals increase in inverse proportion, for example, all kinds of insects, most fish, etc., the small mammals, such as hares, rats, mice, etc. On the other hand, Darwin established that some animals lose their fecundity when they are tamed and domesticated. The elephant is a case in point. This proves that *new living conditions and the changed mode of life that results determine reproductive capacity*.

It so happens that it is precisely the Darwinians who share the fear of overpopulation, and it is on their authority that our modern Malthusians rely. Our Darwinians are always out of luck when they begin to extend their theories to humans, because they resort to crude empirical methods and forget that although man is the highest animal, he, unlike all other animals, is versed in the laws of Nature and can adapt them to his own purposes and make good use of them.

The theory of the struggle for existence, the doctrine that the seeds of new life exist in much larger numbers than can be maintained with existing means of subsistence, would apply also to man if he, instead of exercising his brain and enlisting the services of machinery in order to put the air, soil and water to rational use, grazed like cattle, or like monkeys indulged his sexual instincts without restraint, that is, if he himself became a monkey. Let us observe in passing that besides man monkeys are the only beings whose sexual impulses are not confined to certain periods, a striking proof of the affinity between the two. But though they are closely

related, they are not identical and must not be placed on one level or judged by the same criteria.

It is true that under the prevailing relations of ownership and production, the individual was, and still is, faced with the struggle for existence, and that many fail to obtain the necessities of life. But this is not because of the scarcity of means of subsistence, but because under the given social conditions the means of subsistence are withheld from them in a world where great abundance prevails. It is also wrong to conclude from this that since such a state of affairs was possible up to now, it is immutable, and will never change. It is here that the Darwinians slip up, for they study natural history and anthropology but do not study sociology and, without reflecting, fall in line with our bourgeois ideologists. Hence they reach false conclusions.

Man's sexual instinct is perennial, it is his strongest instinct and demands satisfaction if his health is not to suffer. Also, this instinct is, as a rule, all the stronger in the healthy and normally developed, just as a healthy appetite and a good digestion indicate the possession of a healthy stomach, and are the basic prerequisites of a healthy body. But the gratification of the sexual instinct and conception are not the same thing. The most varied theories have been advanced about the fecundity of the human race. On the whole, we are still groping in the dark in this important field, mainly because for many centuries senseless inhibitions prevented man investigating the laws governing his origin and development and making a thorough study of the laws of human procreation and development. The situation is only gradually changing and must change much more.

Some scientists advance the theory that higher mental development and strenuous mental exertion, in short, higher nervous activity, tends to repress the sexual urge and weaken procreative capacity. This is disputed by others who point out that the better-off classes have, on an average, fewer children and that this cannot be ascribed solely to contraception. Undoubtedly, intense mental occupation tends to repress the sexual instinct, but that such activity is practised by the

majority of our propertied class can be contested. On the other hand, excessive physical exertion also has a repressive influence. But all excessive exertion is harmful and therefore to be avoided.

Others claim that a woman's way of life and diet in particular, coupled with certain physical conditions, determine her power to conceive and beget. Diet, as has been demonstrated in the case of animals, influences the effectiveness of the act of procreation more than anything else. Indeed, it may well be the determining factor. The influence that the diet has on the organism of certain animals is strikingly substantiated in the case of bees, who breed a queen at will by administering special food. Bees are therefore much further advanced in the knowledge of their sexual development than man. Most probably it was not instilled into them for two thousand years that it is "indecent" and "immoral" to concern oneself with sexual matters.

It has also been established that on good and well-manured soil plants thrive luxuriantly but yield no seed. There is little reason to doubt that diet influences the composition of the male sperm and the fecundity of the female ovum in the case of humans as well. Thus, the reproductive capacity of the population may depend to a high degree on the nature of their diet. Other factors, the nature of which is as yet little known, also play a role.

A factor of decisive importance in the population question in the future will be the higher, freer position all our women without exception will then occupy. Intelligent and energetic women, leaving exceptions aside, generally have no desire to give birth to a large number of children as "gifts from God", and to spend the best years of their life pregnant or with a baby at their breast. This tendency to avoid large numbers of children, which most women share even now, may, despite all the solicitude a socialist society will show to pregnant women and mothers, grow stronger rather than weaker. In our opinion, this means that in socialist society the population will most probably grow more slowly than in bourgeois society.

Our Malthusians have really no reason to break their heads about the increase of mankind in the future. Until now nations have been known to perish through the decline, but never through an excess of their population. In the last analysis, population growth is regulated in societies that live according to the laws of Nature without harmful abstention and unnatural measures of control. On this account, too, the future will vindicate Karl Marx; his view that every period of economic development has its own special demographic laws will also prove true under socialism.

In his work *The Artificial Limitation of Progeny*, H. Ferdy expresses the following view:

"The strong opposition of Social-Democrats to Malthusianism is a piece of roguery. The rapid increase of the population favours pauperisation of the masses and this fosters discontent. If the overpopulation could be checked, the spread of Social-Democracy would come to an end, and the Social-Democratic state with all its splendour would be buried for ever. Thus we have one more weapon to add to the many others by which Social-Democracy can be wiped out—Malthusianism."¹

Professor Dr. Adolf Wagner is one of those who suffer from the fear of overpopulation and who therefore demand a restriction of the freedom to marry and to choose a place of residence, particularly as far as workers are concerned. He complains that workers, as compared with the middle class, marry much too early. Like others holding similar views, he ignores the fact that the men of the middle class

¹ Socialist-baiter Ferdy's gross ignorance of Social-Democracy is best illustrated by the passages he comes up with on page 40 of his book: "The Social-Democrats will go further in their demands than the Neo-Malthusians. They will demand that the minimum wage be so fixed that every working man can beget the largest possible number of children according to the social supply of food. . . . As soon as Social-Democracy has drawn the ultimate conclusions and private property has been abolished, even the most stupid would soon begin to ask himself: why should I work longer and harder because my neighbour chooses to thrust a dozen new members into society?" One should at least know the ABC of socialism before presuming to write about it, and such preposterous nonsense at that.

attain a position enabling them to enter into marriage in accordance with their station only at an advanced age. But they compensate themselves for this abstention by turning to prostitutes. If obstacles are placed in the way of marriage for the workers, they will be pushed on to the same path. But in that case, there should be no complaints about the consequences and no shouting about the "decline of virtue and morals". There should also be no indignation if men and women, since the latter have the same instincts as men, form illegitimate unions in order to satisfy their natural instincts and populate town and country with their illegitimate children "as with seed". The views of Wagner and Co. also contradict the interests of the bourgeoisie and of our economic development, which requires as many hands as possible, so that it can dispose of a labour force that makes it competitive on the world market. The evils of the age cannot be cured with petty proposals, which derive from short-sighted philistinism and backwardness. In the early 20th century no class, no state authority is any longer strong enough to hold back or check the natural advance of society. Every such attempt ends in failure. The tide of development is so powerful that it sweeps over every obstacle. Not backwards but forwards is the slogan of today, and he who still believes in obstacles is a fool.

In socialist society where mankind will for the first time be truly free and living according to natural principles, it will consciously direct its own development. In all preceding epochs mankind handled questions of production and distribution, as well as that of population growth, without the knowledge of the laws governing them, that is, unconsciously; in the new society, equipped with knowledge of the laws of its own development, mankind will act consciously and according to a plan.

Socialism is science applied in all fields of human activity.

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Gracchus, Tiberius (163-132 B.C.) and his brother *Gracchus Gaius* (153-121 B.C.)—Roman statesmen, people's tribunes, who fought for the passing of agrarian laws—64

Grant, Ulysses Simpson (1822-1885)—American general, U.S. President from 1869 to 1877, a Republican. Pursued a reactionary domestic and expansionist foreign policy—141

Gregory VII—Roman Pope from 1073 to 1085—160

H

Hargreaves, James (d. 1778)—English inventor of the spinning-jenny—145

Hartmann, Eduard (1842-1906)—German idealist philosopher, combined Schopenhauer's philosophy with the reactionary aspects of Hegel's philosophy and the cult of the unconscious; ideologist of the Prussian Junkerdom—133

Heine, Heinrich (1797-1856)—great German revolutionary poet—124

Helvetius, Claude Adrien (1715-1771)—French materialist philosopher, ideologist of the revolutionary French bourgeoisie of the 18th century, courageously criticised the feudal order and the Catholic religion—54

Hertzka, Theodor (1845-1924)—Austrian economist and writer—32, 33

Humboldt, Alexander (1769-1859)—great German scientist, naturalist and traveller—133

Hus, Jan (1369-1415)—Czech patriot, outstanding leader of the Reformation in Czechoslovakia. Professor and head of the Prague University. Inspired the people's movement in Bohemia directed against the domination of the Germans and the Catholic Church. The German Emperor Sigismund decoyed Hus to the Church Council in Constance, where he was condemned by the Council and burned as a heretic—56

L

Laing, Samuel (1810-1897)—English politician and publicist—152, 161

Liebig, Justus (1803-1873)—outstanding German scientist, founder of agrochemistry—71, 85, 86, 153

Lincoln, Abraham (1809-1865)—outstanding American statesman, one of the founders of the Republican Party, U.S. President (1861-65); during the American Civil War, under mass pressure, he carried out a number of important bourgeois-democratic reforms, which marked the transition to revolutionary methods of warfare; Lincoln was assassinated in April 1865 by an agent of the slave-owners—50

Louis XIU (1638-1715)—King of France (1643-1715)—20

Luther, Martin (1483-1564)—prominent leader of the Reformation and founder of Protestantism (Lutheranism) in Germany; ideologist of the German bourgeoisie—56, 57

M

Malthus, Thomas Robert (1766-1834)—English clergyman, economist, ideologist of the bourgeoisified landed nobility, apologist of capitalism, advocated the misanthropical theory of population—144, 145, 146, 150, 151-53

Marx, Karl (1818-1883)—founder of scientific communism, brilliant thinker, leader and teacher of the international proletariat—96, 121, 143, 148, 152, 160, 164

Mill, John Stuart (1806-1873)—English bourgeois economist and philosopher—29, 31, 48, 58, 150

Moleschott, Jacob (1822-1893)—Dutch scientist, physiologist and philosopher; taught in Germany, Switzerland and Italy—100

Moltke, Helmuth Karl Bernhard (1800-1891)—reactionary Prussian general, Field-Marshal as of 1871, writer, an ideologist of Prussian militarism and chauvinism—140

Morgan, Lewis Henry (1818-1881)—outstanding American scholar, ethnographer, archaeologist and historian of primeval society—135

Münzer, Thomas (c. 1490-1525)—German revolutionary, leader and ideologist of the pea-

sant-plebeian camp during the Reformation and the Peasant War of 1525, advocated egalitarian utopian communism—64

N

Napoleon I Bonaparte (1769-1821)—Emperor of France (1804-14 and 1815)—21, 56

O

Owen, Robert (1771-1858)—great English utopian socialist—52

P

Pavlov, Ivan Petrovich (1849-1936)—outstanding Russian physiologist, Academician, worked out the materialistic teaching of higher nervous activity in animals and men—120

Plato (c. 427-c. 347 B.C.)—Greek idealist philosopher, ideologist of the slave-owning aristocracy—143

R

Ratzel, Friedrich (1844-1904)—German geographer, author of numerous scientific treatises—133

Reichhardt, Stromberg, Mathilde—130

Richter, Eugen (1838-1906)—a leader of the German Free-thinkers' Party which expressed the views of the liberal bourgeoisie; opposed socialism and advocated conciliation of the class interests of the proletar-

iat and the bourgeoisie—100, 126, 127

Robespierre, Maximilien (1758-1794)—outstanding functionary of the French bourgeois revolution of the end of the 18th century; leader of the Jacobins, head of the revolutionary government (1793-94); attempted to substitute a "Supreme Being" cult for Christianity—141

Rodbertus-Jagetzow, Johann Karl (1805-1875)—German vulgar economist and politician, ideologist of the bourgeoisified Prussian Junkerdom, advocated the reactionary idea of Prussian "state socialism"—22

Rousseau, Jean Jacques (1712-1778)—prominent representative of the French Enlightenment, democrat, ideologist of the petty bourgeoisie—102

S

Samter, Adolf (1824-1883)—German economist—64

Sand, George (true surname *Aurore Dudevant*) (1804-1876)—French writer, author of a number of novels on social subjects, representative of the democratic trend in romanticism—130, 131, 132

Schäffle, Albert Eberhard Friedrich (1831-1903)—German vulgar economist and sociologist, advocated the rejection of the class struggle and called for co-operation between the bourgeoisie and the proletariat—65, 133

Schiller, Friedrich (1759-1805)—great German poet and writer—64, 132

Schopenhauer, Arthur (1788-1860)—German idealist philosopher, advocated voluntarism, irrationalism and pessimism, ideologist of the Prussian Junkerdom—133

Sigismund (1368-1437)—Emperor of Germany (1411-37)—56

Spencer, Herbert (1820-1903)—English philosopher and sociologist, positivist, apologist of capitalism—152, 161

Stewart, Sir James (1712-1780)—English economist—143

T

Thaer, Albrecht Daniel (1752-1828)—German agronomist—71

Tolstoi, Leo (1828-1910)—great Russian writer who had an enormous impact on the development of Russian and world literature—143

Townsend, Joseph (1739-1816)—English clerical, geologist and sociologist, propagated an anti-scientific population theory subsequently adopted by Malthus—144

Treitschke, Heinrich (1834-1896)—German reactionary historian and publicist; ideologist and propagandist of Prussian domination, chauvinism, racialism and German expansion—126, 127

U

Uinci, Leonardo da (1452-1519)—great Italian painter, encyclopaedist and engineer of the Renaissance—50

Virchow, Rudolf (1821-1902)—prominent German naturalist and politician, opponent of socialism—151, 160

Voltaire, François-Marie (real surname, *Arouet*) (1694-1778)—famed French writer and philosopher, well-known representative of the Enlightenment of the 18th century, fought against absolutism and Catholicism—143

W

Wagner, Adolf (1835-1917)—German vulgar bourgeois economist, representative of the so-called socio-legal school in political economy, Katheder-Socialist—64, 91, 150, 164, 165

Wagner, Richard (1813-1883)—great German composer—112

Wallace, Robert (1697-1771)—English clergyman and statistician, propagated an anti-scientific population theory latter borrowed by Malthus—143

Watt, James (1736-1819)—outstanding English inventor who designed the universal steam-engine—145

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